# **DOCTORAL GRADUATIONS**

# D.H. AKENA (PSYCHIATRY AND MENTAL HEALTH)

Screening for depression among HIV-positive patients in a primary health care HIV setting in Uganda Supervised by Professor D. Stein and Professor J. Joska

## V. ALLEN (CLINICAL LABORATORY SCIENCES)

The development of a point-of-care diagnostic test for tuberculosis

Supervised by Professor M. Nicol and Dr L. Ah Tow

# D.A. AUGER (HUMAN BIOLOGY)

3D cine DENSE MRI: ventricular segmentation and myocardial strain analysis

Supervised by Associate Professor E. Meintjes and Dr B.S. Spottiswoode

# R. BAATJIES (PUBLIC HEALTH AND FAMILY MEDICINE)

The study of occupational risk factors and interventions for baker's allergy and asthma among supermarket bakery workers

Supervised by Professor M. Jeebhay, Professor D. Heederik and Dr T. Meijster

## L.T. BELL (CLINICAL LABORATORY SCIENCES)

High throughput proteomic analysis of Mycobacterium tuberculosis associated Immune Reconstitution Inflammatory Syndrome (TB-IRIS) Supervised by Professor J. Blackburn

# F.G. BELTRAMI (HUMAN BIOLOGY)

Beyond the VO2max plateau: a new approach for measuring maximal oxygen uptake

Supervised by Professor T. Noakes and Professor P.D. Wagner

### B.M. BEREZOWSKI (SURGERY)

The pathological outcomes related to symptomatic impacted third molars and follicles as found in a private practice in South Africa

Supervised by Professor D. Khan and Professor V. Phillips

### S.R. BRUIJNS (SURGERY)

From anxiety to haemorrhage: describing the physiological effects that confound the prognostic inferences of vital signs in injury

Supervised by Professor L. Wallis and Dr H.R. Guly

# N.C. BURNHAMS (PUBLIC HEALTH AND FAMILY MEDICINE)

The effectiveness of an evidence-based workplace substance abuse and substance-related HIV prevention programme within a service industry

Supervised by Professor L. London and Professor C. Parry

# E. CHIGUTSA (MEDICINE)

Population pharmacokinetics and pharmacokineticpharmacodynamic modeling of antitubercular drugs Supervised by Associate Professor H. McIlleron and Professor C. Kirkpatrick

### N.S. DAMBUZA (MEDICINE)

Antimalarial activity and pharmacokinetic properties of new chemical entities

Supervised by Associate Professor P. Smith, Dr L. Wiesner and Professor K. Chibale

# M.-A. DAVIES (PUBLIC HEALTH AND FAMILY MEDICINE)

Outcomes and effectiveness of antiretroviral therapy for HIV-infected children in South African treatment cohorts

Supervised by Associate Professor A. Boulle and Associate Professor B. Eley

### A. DEFFUR (MEDICINE)

The transciptomic landscape of HIV-TB Supervised by Associate Professor N. Mulder, Professor B. Mayosi and Professor R. Wilkinson

### M.E. ENGEL (MEDICINE)

A study of determinants and prevalence of rheumatic heart disease in Cape Town Supervised by Professor B. Mayosi

### C. FROYD (HUMAN BIOLOGY)

Central and peripheral regulation of performance Supervised by Professor T. Noakes and Professor G.Y. Millet

# G.A. GABRIELS (MEDICINE)

The investigation and assessment of nutritional and traditional supplement products for content validity, contamination and adulteration

Supervised by Professor M. Lambert and Associate Professor P. Smith

#### A. GEVERS (PSYCHIATRY AND MENTAL HEALTH)

An exploration of the nature of contemporary adolescents' intimate relationships

Supervised by Associate Professor C. Mathews and Professor R. Jewkes

# L.K. GRACE (MEDICINE)

The relationship between Alzheimer's disease, inflammation, the APOE genotype and neuronal integrity Supervised by Associate Professor M. Combrinck and Professor L. Kellaway

# A.R. HORN (PAEDIATRICS AND CHILD HEALTH)

Early prediction of hypoxic ischaemic encephalopathy in newborn infants in a resource-limited setting Supervised by Professor G. Swingler, Associate Professor L. Myer and Professor N. Robertson

### R. HURDAYAL (CLINICAL LABORATORY SCIENCES)

Deletion of IL-4 receptor alpha on dendritic cells renders BALB/c mice hypersusceptible to Leishmania major infection

Supervised by Professor F. Brombacher and Dr N. Nieuwenhuizen

#### J. JAYAKUMAR (CLINICAL LABORATORY SCIENCES)

The role of IL-4 receptor alpha in chronic allergic airway disease (AAD)

Supervised by Professor F. Brombacher and Dr N. Nieuwenhuizen

### Y.T. JOFFE (HUMAN BIOLOGY)

Dietary fat modulates the relationship between polymorphisms in the TNFA and IL-6 genes, and obesity and serum lipid concentrations in black and white South African women

Supervised by Dr J. Goedecke, Professor M. Collins and Dr L. van der Merwe

# E.L. KAMPIRA (CLINICAL LABORATORY SCIENCES)

Pharmacogenetics of stavudine: role of genetic variation in mitochondrial DNA and polymerase gamma among adult Malawian HIV/AID patients

Supervised by Associate Professor C. Dandara and Professor J. Kumwenda

### B. KLEEMANN (HUMAN BIOLOGY)

St. John's Wort photomedicine for melanoma Supervised by Dr L. Davids

### T.R. LINDSAY (HUMAN BIOLOGY)

Influences on the nonlinear dynamics of human running stride time series

Supervised by Professor T. Noakes and Professor S. McGregor

### G.M. LONDON (MEDICINE)

Isolation, characterization and efficacy studies of RNA aptamers against HIV-1 subtype C envelope pseudotyped virus

Supervised by Dr M. Khati and Professor B. Mayosi

# H. MAHOMED (PUBLIC HEALTH AND FAMILY MEDICINE)

The incidence of tuberculosis in adolescents in the context of proposed TB vaccine trials

Supervised by Professor R. Ehrlich and Professor G. Hussey

### T.N.C. MANN (HUMAN BIOLOGY)

Post-exercise oxygen consumption and heart rate recovery as possible measures of the homeostatic stress of an exercise bout

Supervised by Professor M. Lambert and Dr R. Lamberts

# G.T.M. MASHABELA (CLINICAL LABORATORY SCIENCES)

Characterization of a unique sulfoxide synthase found in pathogenic trypanosomes

Supervised by Associate Professor D. Gammon and Emeritus Associate Professor D.J. Steenkamp

### M. MATEJCIC (CLINICAL LABORATORY SCIENCES)

Identification of genetic polymorphisms associated with oesophageal squamous cell carcinoma risk in South Africa

Supervised by Professor I. Parker

# S. MOYO (PAEDIATRICS AND CHILD HEALTH)

Optimal tuberculosis case-finding methodologies for field trials of new tuberculosis vaccines in young children Supervised by Professor G. Hussey and Associate Professor M. Hatherill

#### H.H. NDLOVU (CLINICAL LABORATORY SCIENCES)

Investigating the role of CD28 costimulation and IL-4/ IL-13 responsive myeloid and lymphoid cells during helminth infections in mice

Supervised by Professor F. Brombacher and Dr W. Horsnell

#### A. NOFEMELA (CLINICAL LABORATORY SCIENCES)

Characterization of genotypic and phenotypic properties of transmitted human immunodeficiency virus type 1 variants circulating in Mbeya Tanzania Supervised by Professor C. Williamson and Dr Z. Woodman

#### D.B. OJJI (MEDICINE)

Biomarkers of ventricular remodelling in African hypertensives

Supervised by Professor K. Sliwa-Hahnle and Associate Professor S. Lecour

#### R.E. PARKER (PSYCHIATRY AND MENTAL HEALTH)

Pain in HIV/AIDS: characteristics, contributing factors and the effects of a six-week peer-led exercise and education intervention

Supervised by Professor D. Stein and Professor J. Jelsma

#### N. PEER (MEDICINE)

Cardiovascular disease risk factors in the urban black population of Cape Town

Supervised by Professor N. Levitt and Professor K. Steyn

### J.P. PERES (HUMAN BIOLOGY)

The role and regulation of the T-box transcription factor, TBX3, in melanoma progression

Supervised by Associate Professor S. Prince and Dr S. Mowla

# J.G. PETER (MEDICINE)

Approaches to the diagnosis of smear-negative and sputum scarce TB in South Africa Supervised by Professor K. Dheda

# N. PETON (CLINICAL LABORATORY SCIENCES)

Development of an Activity-Based Protein Profiling (ABPP) array-based platform for quantitative analysis of kinase inhibitor selectivity Supervised by Professor J. Blackburn

## J.D. PILLAY (HUMAN BIOLOGY)

Steps that count! The use of pedometry for physical activity and health promotion in South Africa Supervised by Professor V. Lambert and Dr T. Kolbe-Alexander

# P.J. RANDALL (CLINICAL LABORATORY SCIENCES)

Neurons are new host cells for Mycobacterium tuberculosis

Supervised by Associate Professor M. Jacobs, Dr N.J. Hsu and Professor L.A. Kellaway

# B.L. RAYNER (MEDICINE)

Investigation of the ethnic differences and genetics of salt sensitivity and salt sensitive hypertension in South Africa

Supervised by Professor R. Ramesar

#### R. SARKAR (CLINICAL LABORATORY SCIENCES)

The innate immune response to mycobacterium tuberculosis is dependent on strain lineage and on the host population

Supervised by Professor M. Nicol and Professor R.J. Wilkinson

### C.J. SAUNDERS (HUMAN BIOLOGY)

Extracellular matrix gene sequence variant analyses and Achilles tendinopathy

Supervised by Professor M. Collins and Dr A.V. September

### S.-K. SHARP (SURGERY)

The in vivo characterisation of a C-domain specific ACE inhibitor Supervised by Dr N. Davies, Professor E. Sturrock and Associate Professor T. Franz

#### L.C. SMITH (CLINICAL LABORATORY SCIENCES)

The role of CD4+T cells in host protective responses against cutaneous leishmaniasis using genome-wide transciptomics

Supervised by Professor F. Brombacher and Dr A. Schwegmann

## E.A. STERN (PUBLIC HEALTH AND FAMILY MEDICINE)

Reappraising men's sexual behaviours and gendered attitudes from the sexual-histrory narratives of South African men and women in a time of HIV/AIDS

Supervised by Associate Professor D. Cooper and Professor R. Buikema

# A.O. TIAMIYU (NEÉ INYANG) (HUMAN BIOLOGY)

Design and evaluation of a novel meniscal prosthesis for the knee Supervised by Professor K. Vaughan

# V. TIMMERMAN (MEDICINE)

The effect of antiretroviral treatment on HIV associated tuberculosis incidence and outcomes in the Free State Province, South Africa Supervised by Dr L. Fairall and Professor M.O. Bachmann

### J.J. VAN DER WATT (MEDICINE)

HIV- associated sensory neuropathy in an African cohort; a longitudinal study of risk factors predisposing to antiretroviral induced painful neuropathy Supervised by Associate Professor J.M. Heckman, Professor R. Wilkinson and Professor C. Dandara

### A. VIRA (CLINICAL LABORATORY SCIENCES)

Role of M3 muscarinic receptor in regulation of immunity to infectious pathogens Supervised by Professor F. Brombacher and Dr W. Horsnell

### S.M. WANSLEBEN (HUMAN BIOLOGY)

The role of the transcription factor TBX2 in breast cancer and melanoma and its regulation in the UVinduced DNA damage pathway Supervised by Associate Professor S. Prince

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# **PATENTS**

# **Filed applications**

Blackburn, J.M., Dheda, K.U.J., Young-Gqamana, B.L. Method for diagnosing tuberculosis in a urine sample. Provisional Patent Application Britain 1314873.9.

Brijlal, Y., John, L.R., Sivarasu, S. Hand Exoskeleton. PCT Patent Application PCT PCT/IB2013/059809.

Collins, M.R., September, A.V. Oligonucleotides and Methods for Determining a Predisposition to Soft Tissue Injuries. PCT Patent Application PCT PCT/ IB2013/050083.

Habte, H.H., Mall, A.H.S, Peacocke, J. Microbicide. Provisional Patent Application South Africa 2013/04910.

Harris, H.C., Tiamiyu, A.O.J, Vaughan, C.L Knee meniscus prosthesis. Provisional Patent Application South Africa 2013/02102.

Hitzeroth, I.I., Maclean, J.M., Rybicki, E.P., Williamson, A-L. Expression of Proteins in Plants. Divisional Patent Application United States 13/753,196.

Howells, M.F. Stabilising Kit. Provisional Patent Application Britain 1318310.8.

Jacobs, M., Jardine, M.A. Tricyclic Derivatives. PCT Patent Application PCT PCT/IB2013/060403.

Masson, L., Passmore, J.S. Method for diagnosing sexually transmitted infections and bacterial vaginosis in women. Provisional Patent Application Britain 1319264.6.

Mfolozi, S. Apparatus for Estimating Post-Mortem Interval of a Corpse. National Phase Patent Application South Africa 2013/01019.

Mishra, A.K., Montsi, T.S. Imaging an Internal Volume of a Subject Body. Provisional Patent Application Britain 1322092.6.

Patnaik, S., Sivarasu, S. Anatomical Support Facilitating Medical Imaging of the Hip, Leg and Knee. Provisional Patent Application Britain 1319689.4.

# **Granted applications**

Campbell, W.E., Folb, P.I., Matsabisa, M., Smith, P. Treatment of Parasitic Infections in Humans and Animals. National Phase Patent Application United States 11/718,690. Acharya, K.R., Sturrock, E.D. Crystal Structure of an Angiotensin-Converting Enzyme (ACE) and Uses Thereof. Divisional Patent Application United States 12/714,149.

Bourn, W., Gray, C.M., Karim, S.A., Van Harmelen, J.H., Williamson, C. HIV-1 Subtype Isolate Regulatory/ Accessory Genes, and Modifications and Derivatives Thereof. National Phase Patent Application Europe 02802345.5.

Burger, I.H. Method for Compensating for Respiratory Motion in Magnetic Reasonce Imaging. National Phase Patent Application South Africa 2012/06353.

Burger, I.H. Method for Compensating for Respiratory Motion in Magnetic Reasonce Imaging. National Phase Patent Application United States 13/580,640.

Campbell, W.E., Folb, P.I., Matsabisa, M., Smith, P. Treatment of Parasitic Infections in Humans and Animals. National Phase Patent Application United States 11/718,690.

Chibale, K., Nchinda, A.T., Sturrock, E.D. Angiotensin I-Converting Enzyme (ACE) Inhibitors. National Phase Patent Application Canada 2,609,811.

Chibale, K., Nchinda, A.T., Sturrock, E.D. Angiotensin I-Converting Enzyme (ACE) Inhibitors. National Phase Patent Application Canada 2,609,812.

Dheda, K.U.J. Method and Device for Diagnosing Tuberculosis. National Phase Patent Application South Africa 2011/04416.

Hitzeroth, I.I., Maclean, J.M., Rybicki, E.P., Williamson, A-L. Expression of Proteins in Plants. National Phase Patent Application China 200680014202.5.

Hitzeroth, I.I., Maclean, J.M., Rybicki, E.P., Williamson, A-L. Expression of Proteins in Plants. National Phase Patent Application United States 11/912,912.

Hunter, R., Kaschula, C.H., Parker, M.I. Organosulfur Compounds, a Method of Making Organosulfur compounds and their Use for Inhibiting the Growth of Tumor Cells. National Phase Patent Application United States 13/057,960.

Lazarus, J.M., Williams, J. Manually Operable Positioning Device with Locking Facility. Complete Patent Application South Africa 2012/08745.

Mfolozi, S. Apparatus for Estimating Post-Mortem Interval of a Corpse. National Phase Patent Application South Africa 2013/01019. Rybicki, E.P., Tanzer, F.L. Expression System Incorporating a Capsid Promoter Sequence as an Enhancer of a Cytomegalovirus Promoter. National Phase Patent Application ARIPO AP/P/2008/004476.

Rybicki, E.P., Tanzer, F.L. Expression System Incorporating a Capsid Promoter Sequence as an Enhancer. National Phase Patent Application United States 12/084,728.

# DEPARTMENT OF Anaesthesia

# Head of Department: Professor JLC Swanevelder

# Second Chair: Professor RA Dyer

# **Departmental Profile**

# **Clinical research:**

The Professor and Head of Department of Anaesthesia. Justiaan LC Swanevelder, has signaled a new era of cardiovascular research in the Department. Professor Swanevelder is an international expert in the field of Transoesophageal (TOE) and Transthoracic (TTE) Echocardiography, and has played a central role in the development of this field, and formal guidelines for practice and accreditation in the United Kingdom. He is a prominent member of the European Association of Cardio-thoracic Anaesthesia (EACTA). His initial contribution has involved a paper on a suggested time course for accreditation in South Africa, as well as several case reports and an editorial on the subject. Several important collaborations have been established during 2013, and research initiatives established, involving teaching and research on TTE and TOE by visiting experts (Professors E Sloth, Denmark, A Dennis, Australia and J Ender, Leipzig), with a view to training and studies in both intraoperative and point of care echocardiography. Numerous courses have been conducted on various aspects of medical ultrasound, and considerable outreach has involved Universities around the country. An HREC approved study will shortly be conducted on the value of ultrasound in medical student volunteers. Professor Swanevelder has also established a new laboratory research post. The first incumbent, Dr Nkanyiso Hadebe, is involved in his PhD project on cardiac pre-conditioning, which has a laboratory and a clinical component. He is collaborating with Professors S Lecour and Karen Sliwa in the Hatter Institute of Cardiovascular Research.

The Red Cross Hospital operating theatre complex continued to create an environment conducive to

research, and this was evidenced by the publication of several instructive case reports, and several MMed dissertations. These include a completed pharmacokinetic study of the antimicrobial agent cefazolin during cardiopulmonary bypass. The Department of Pharmacology has developed an assay for cefazolin, which should facilitate several further important clinical trials. Important projects in thromboelastography (TEG) are ongoing, and Dr Owen Hodges is in the process of writing up his PhD on the use of TEG during burns surgery. Valuable guidelines have been published for pain management and sedation in children. A further study on the noninvasive measurement of haemoglobin in paediatrics, is nearly complete.

Obstetric Anaesthesia remains an important area of investigation. Ongoing projects involve spinal anaesthesia in preeclamptic parturients. As part of this investigation, collaboration was initiated with the Department of Anaesthesia of the University of Washington. This aspect of the study will examine the population characteristics of the adrenaline β2-haplotype in preeclamptic women. Two MMed mini-dissertations are in progress in this regard. An abstract was presented on stroke volume responsiveness in preeclampsia at the Obstetric Anaesthetists' Association Annual Meeting in Bournemouth in May 2013. During the visit of Professor AT Dennis, from the University of Melbourne, data was collected on transthoracic echocardiography in pregnant women. Four abstracts will be presented at the Obstetric Anaesthetists' Association and Society of Obstetric Anaesthetists and Perinatology meetings in May 2014, including findings in patients with severe preeclampsia, and HIV positive women. The latter project is the subject of an MMed dissertation. During a further visit from Professor C Ortner from Seattle, a study was performed on acid base balance in preeclampsia; the data served as the basis for a further MMed dissertation. The leader of this research group, Professor RA Dyer, has been B-2 NRF rated, on the basis of completed research in the period of review from 2004-2011.

The Department is an active research site for the international, multicentre POISE-2 trial of aspirin and clonidine for perioperative protection of high risk patients against perioperative myocardial events, and has recruited the second highest number of patients in South Africa. The South African principal investigator is Professor B Biccard, from the Department of Anaesthesia, UKZN. The local site was initially set up by Prof M James. The lead author is Dr A Myburgh, with Dr O Porrill as co-investigator in 2013.

# Airway research:

2013 saw considerable advances in the Difficult Airway Facility, under the leadership of Dr R Hofmeyr. Dr D Wilson, of Guy's Hospital in London, collaborated with our Difficult Airway research group, and conducted original clinical research on the newly devised supraglottic device, the 3gLM, and in addition devised a laboratory vomiting model using cadavers, in order to compare the function of various supraglottic airways with respect to protection against passive regurgitation and active vomiting. This work is to be presented at the SASA 2014 Congress.

# Fluid research:

After the withdrawal of the hydroxyethyl starches as perioperative resuscitation fluids following recent well-publicized research papers, the Department became involved in an advisory capacity in composing an evidence-based letter, in conjunction with other SA universities, recommending the reinstatement of the HES 130.4 solution for perioperative use. This was successful. There is ongoing research with the University College Hospital in London in connection with the identification of the ideal crystalloid anion.

## **Critical Care:**

In the field of septic shock, two projects are in progress. The first involves high dose Vitamin C in the management of haemodynamic failure, and the second relates to markers of oxidative stress in this condition. Part of the latter theme has already been presented at the World Congress of Critical Care, and won an award. In the interests of improved quality assurance, an MMed project has addressed the important issue of ICU handoffs. This has improved patient care and will be the subject of two publications. A further study on semi-closed loop control of blood glucose is planned after a pilot study in 2013. An international collaborative study is in progress on the attitudes of physicians to the withdrawal of therapy.

### Laboratory Research:

The Department was involved in several areas of research in 2013. There are ongoing studies on coagulation, and an animal study of coagulation in a porcine model of acute liver failure, in collaboration with University College London. Further ongoing studies include the use of TEG to examine coagulation in HIV parturients, and in patients undergoing renal biopsy. The acquisition of the thromboelastometry device (ROTEM), will allow for more accurate diagnosis of causes of coagulation abnormalities. Lizel Immelman, our senior medical technologist, has been appointed to a permanent post and is performing an important research administrative role over and above her role in teaching and individual projects. She plays an important role in teaching of the coagulation process and instruction on the use and utility of TEG and ROTEM devices, which are based on viscoelastic changes during the clotting process.

Our Department is also collaborating with the Department of Cardiothoracic Surgery and Strait Access

Technologies, and supporting innovative cardiovascular research on new heart valve procedures in animal models in the Christiaan Barnard Building.

The Department is co-supervising Mauritz van den Berg for his Master's Degree research on new muscle relaxants, magnesium and a novel reversal agent (Sugammadex) in a rat model, in collaboration with Emeritus Professor Laurie Kellaway of the Department of Human Biology.

# **Collaboration:**

Once again, junior consultants and registrars were encouraged to participate in research activities wherever possible, and scientific writing skills were also improved in this way.

Interdisciplinary collaboration at UCT is strong, and includes the Departments of Cardiothoracic Surgery, Obstetrics and Gynaecology, Neonatology, Paediatrics, Critical Care, the Hatter Institute of Cardiovascular Research, and the partly UCT- owned Strait Access Technologies (Biomedical Engineering).

National collaboration has been strengthened, in particular with UKZN, where a study has been planned on biomarkers and echocardiography in patients with severe preeclampsia. A systematic review of the available evidence in this regard, was published in collaboration with UKZN.

International collaboration continues, and is constantly expanding. The Department collaborates with the University of Aarhus, Denmark, the University of Melbourne, the University College London Hospitals, the University of Leipzig, the University of Toronto, Stanford University, Rikshospitalet in Oslo, the University of Washington, and Glenfield Hospital/University Hospitals Leicester. In the field of echocardiography, important collaborations have been established with Professors E Sloth (Denmark), A Dennis (Australia), J Ender (Leipzig) and Andrew Roscoe (Toronto). In thoracic surgery, Professor Peter Slinger of Toronto is a world leader and collaborator with the Department. In the area of the difficult airway, new ties have been established with Dr D Miller of Guy's and St Thomas' Hospital in London, and Dr Ellen O'Sullivan (President of the Irish College of Anaesthetists) of Dublin. Ongoing laboratory collaboration continues with Dr Monty Mythen of UCLH.

# **Divisional Statistics**

# Permanent and long-term contract staff

Professors	2
Associate Professors	1
Emeritus Professors	2
Specialists	41
Affiliated Consultants	1
Medical Officers	6
Technologists	7
Administrative and Support staff	6
Total	66

# Students

Doctoral	2
Master's	47
Registrars	47
Undergraduate 4th and 5th year MBCHB	377
Total	473

# **Research Fields and Staff**

### SWANEVELDER, JLC.

The value of transoesophageal and transthoracic echocardiography on cardiovascular patients in the perioperative period(see above); introducing TTE into undergraduate medical training and curriculum. Laboratory work: muscle relaxants and reversal agents, intralipid and myocardial pre-conditioning.

### HADEBE N, SWANEVELDER J.

Cardiac pre-conditioning.

### VAN DEN BERG M, JAMES M, SWANEVELDER J.

New muscle relaxants, magnesium and novel reversal agent, Sugammadex.

#### MILLER M, JAMES MF, IMMELMAN L.

Coagulation studies using thromboelastography and thromboelastometry.

### JOUBERT IA, PIERCY J, MILLER M.

Septic shock, ICU Quality Assurance, liver failure model.

# DYER RA, VAN DYK D, REED AR, ARCACHE M, VORSTER A, K TIMMERMAN, M RADEMEYER, SWANEVELDER J.

### **Obstetric anaesthesia:**

Cardiac output studies during spinal anaesthesia in patients with preeclampsia; effects of fluid loading and vasopressors; the genetics of preeclampsia; effects of vasopressors on cord gases; spinal anaesthesia in the obese parturient; transoesophageal and transthoracic echocardiography.

### THOMAS J.

Management of burns in children; pain management in children; Case reports; Fluid management in children; Noninvasive haemoglobin measurement; Pharmacokinetics of antimicrobial agents during cardiopulmonary bypass; Paediatric burns: Coagulation studies; Evaluation of the need for psychosocial services for paediatric burn patients at the RCWMCH.

### HODGES O, THOMAS J.

Coagulation in patients with paediatric burns.

# SWANEVELDER J, MYBURGH A, NEJTHARDT M, ROODT F, CLOETE E.

Transoesophageal echocardiography in cardiac anaesthesia; Point of care TTE; Medical student education in ultrasound.

#### MYBURGH A, JAMES MF.

POISE-2 trial

### LLEWELLYN R.

Drug errors in anaesthesia.

ROODT F, DE VAAL A, HOFMEYR R. Airway research.

# **Contact Details**

Postal Address: D23 Department of Anaesthesia, New Groote Schuur Hospital, Anzio Road Observatory, 7925, South Africa UCT Telephone: SA (21) 406 6143 GSH Telephone:SA (21) 404 5004 Fax:SA (21) 406 6589 Email: justiaan.swanevelder@uct.ac.za robert.dyer@uct.ac.za

# **Research output**

### **Chapters in books**

Dyer, R.A. and Schoeman, L.K. 2013. Fetal distress. In Y. Ginosar, F. Reynolds, S. Halpern and C.P. Weiner (eds), Anesthesia and the Fetus, pp. 315-324. West Sussex, UK: Blackwell Publishing Ltd. ISBN 9781444337075.

Hofmeyr, M. 2013. South Africa: where are we going? In D.W. Crippen (ed), ICU Resource Allocation in the New Millennium, pp. 169-176. New York, USA: Springer. ISBN 9781461438656.

Swanevelder, J. 2013. Drugs used in renal disease. In A.R. Aitkenhead, I.K. Moppett and J.P. Thompson (eds), Textbook of Anaesthesia, pp. 168-179. 6th edition. United Kingdom: Churchill Livingstone Elsevier. ISBN 9780702041921.

Swanevelder, J. and Greenhalgh, D.L. 2013. Transesophageal echocardiography for coronary revascularization. In A.C. Perrino Jr and S.T. Reeves (eds), A Practical Approach to Transesophageal Echocardiography, pp. 302-326. 3rd edition. USA: Wolters Kluwer/Lippincott Williams & Wilkins. ISBN 9781451175608.

# Articles in peer-reviewed journals

Afshani, A., Moustaqim-Barrette, A., Biccard, B.M., Rodseth, R.N. and Dyer, R.A. 2013. Utilility of b-type natriuretic peptides in preeclampsia: a systematic review. International Journal of Obstetric Anesthesia, 22: 96-103.

Bester, K. 2013. Anaesthetist's evaluation of a child with a heart murmur. Southern African Journal of Anaesthesia and Analgesia, 19(1): 14-17.

Casey, M.E., Hodges, O., Dunn, R.N. and Thomas, J.M. 2013. Thromboelastography to monitor the intraoperative effects of low-molecular weight heparin following bridging anticoagulation in a child with normal renal function. Anaesthesia, 68(1): 91-96.

Dyer, R.A. 2013. Obstetric anaesthesia: is there anything new under the sun. Southern African Journal of Anaesthesia and Analgesia, 19(1): 29-32.

Firmin, R., Swanevelder, J. and Ferreira, M.M. 2013. Extracorporeal membrane oxygenation (ECMO) in South Africa. Southern African Journal of Critical Care, 29(1): 3-5.

Gordon, P.C., Hauser, N. and Marais, J. 2013. Pioneers in South African anaesthesia: Professor Arthur Bull and the taurus radiofrequency blood warmer. Southern African Journal of Anaesthesia and Analgesia, 19(4): 194-195.

Gray, R. 2013. Anaesthesia and the paediatric muscle disorders. Southern African Journal of Anaesthesia and Analgesia, 19(1): 20-23.

Haus, N.J., Kambarami, T.C. and Dyer, R.A. 2013. Spinal anaesthesia for brachytherapy for carcinoma of the cervix: a comparison of two dose regimens of hyperbaric bupivacaine. Southern African Journal of Anaesthesia and Analgesia, 19(3): 154-159.

Hofmeyr, M. and Gordon, P.C. 2013. Pioneers in South African anaesthesia: Thomas Voss and the "Elephant Tube". Southern African Journal of Anaesthesia and Analgesia, 19(5): 239-241.

Jackson, T. and Thomas, J.M. 2013. Tuberculosis: the implications for anaesthesia. Southern African Journal of Anaesthesia and Analgesia, 19(6): 301-305.

Lau, G., Ther, G. and Swanevelder, J. 2013. McConnell's sign in acute pulmonary embolism. Anaesthesia and Analgesia, 116(5): 982-985.

Miller, N., Miller, M. and Hill, J.C. 2013. The impact of antioxidant supplementation on clinical outcomes in the critically ill: a meta-analysis. Southern African Journal of Critical Care, 29(1): 18-26.

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# DEPARTMENT OF Clinical Laboratory Sciences

# DIVISION OF ANATOMICAL Pathology

# Head of Division: Professor Dhiren Govender

The Division of Anatomical Pathology has both diagnostic and academic components. The diagnostic laboratories form part of the National Health Laboratory Service (NHLS) complex at Groote Schuur (GSH) and Red Cross War Memorial Children's (RCWMCH) hospitals.

The Diagnostic laboratories are at both sites and provide a diagnostic histopathology, cytopathology and autopsy services to GSH and RCWMCH, the academic hospital complex and associated hospitals and clinics in the Western Cape. The division also serves as a public and private tertiary referral and consultation centre for Anatomical Pathology.

These service commitments drive most of the research programmes that are patient and disease orientated. The Research laboratory had 1 PhD, 4 MSc (2 graduated in 2013), 15 MMed students and 1 elective student during the reporting period. Two additional PhD students registered during 2013. The Division has been involved in a range of research activities using a variety of techniques and continues to broaden its research base. The main research focus is in the field of molecular pathology pertaining to diseases that are common in South Africa and the Western Cape - these include various cancers, in particular those affecting disadvantaged population groups. The major research focus since the establishment of the divisional research laboratory has been breast cancer, gastrointestinal cancer and lymphoma. Cancer research includes studies related to the use of matrix-assisted laser desorption/ ionization time of flight mass spectrometry (MALDI-TOF-MS) to identify proteins and peptides in formalin fixed paraffin embedded cancer tissue. In addition, we are also investigating the use of MALDI imaging mass spectrometry to identify proteomic patterns and their distribution directly in tissue. Other research areas include tuberculosis, cardiomyopathy and foetalalcohol syndrome.

The Division successfully presented the Young Pathologist seminar at the Laboratory Medicine Congress held at the Cape Town International Convention Centre in July 2013. Divisional staff were part of the organising committee for this Congress.

# **Collaborative Research**

The Division has active collaborations internationally with the United States and continues to establish collaborations with other Academic Pathology departments in Africa. We have an established joint breast cancer research project with the Aga Khan University in Nairobi, jointly funded by the NRF and Kenya. We are exploring similar collaborations with the Pathology department at the Muhimbili University of Health and Allied Sciences in Dar es Salaam. A joint project with the University of Botswana was established in 2013 and a student from Botswana is registered for a PhD in the Division.

There are internal collaborations with the departments of Surgery, Medicine, Cardiology, Obstetrics and Gynaecology, Radiation Oncology, Human Biology, Human Genetics, Forensic Medicine and Medical Biochemistry.

# **Divisional Statistics**

# Permanent and Long-term Contract Staff on UCT Establishment

Professor (HoD)	1
Chief Scientific Officer	1
Administrative and Clerical Staff	1
Total	3

# Joint Academic Staff on NHLS Establishment

Associate Professor	2
Senior Lecturer	3
Lecturer	3
Assistant Lecturers (registrars)	11
Total	19

# **Honorary Staff**

Honorary Senior Lecturer	1
Total	1

# Grant funded staff on UCT Establishment

|--|

# Students

PhD	3
Master's (MMed)	13
Master's (MSc)	2
Master's (MPhil)	2
Undergraduate (MBChB) Year 2	224
Undergraduate (MBChB) Year 3	221
Undergraduate (MBChB) Year 5 (Gynaecology)	212
Allied Health Sciences	160
Intercalated course	5
Elective students	1
Total	843

# **Research fields and staff**

# PROFESSOR DHIRENDRA GOVENDER

Pathobiology of cancers, especially breast cancer, gastrointestinal tract cancers and lymphoma.

### A/PROFESSOR RICHARD NAIDOO

Molecular pathology and biomarkers in cancer.

### A/PROFESSOR HELEN WAINWRIGHT

Foetal, perinatal & neonatal pathology, placental pathology, respiratory pathology including TB, cardiac pathology including cardiomyopathy and liver disease.

### DR MAUREEN DUFFIELD

Neuropathology, renal pathology and electron microscopy.

### DR MICHAEL LOCKETZ

Gastrointestinal tract pathology.

#### DR SHUMANI MALAKA

Breast, gynaecological and thyroid gland pathology.

### DR KOMALA PILLAY

Paediatric pathology, lymphoma and fine needle aspiration cytology.

DR RAVEENDRA SOOKHAYI Lymphoma and Soft tissue sarcoma

# DR HUE-TSI WU

Gynaecological pathology

# **Distinguished visitors**

DR MARTINA VETTER – UNIVERSITY OF KLINIKUM HALLE GERMANY PROF LOTHA BOHM – TYGERBERG HOSPITAL DR REBECCA FOLKERTH – BOSTON USA DR CHRIS WALKER – DAVIES LABORATORY, CAPE TOWN

# **Contact details**

Dhiren.Govender@uct.ac.za Website: Anatpath.uct.ac.za

# **DIVISION OF CHEMICAL PATHOLOGY**

(Including the Chemical Pathology sections of Groote Schuur Hospital and Red Cross War Memorial Children's Hospital)

# Head of Division: Professor David Marais

# **Divisional Profile**

The Division of Chemical Pathology comprises both academic and diagnostic sections. The academic section is located in the Faculty of Health Sciences and the diagnostic laboratories are based in NHLS core laboratories at Groote Schuur Hospital and Red Cross Children's Hospital. These laboratories offer a diagnostic service to both adult and paediatric patients attending the Groote Schuur and Red Cross Children's Hospitals. Members of staff participate in ward rounds and clinical meetings, especially with the Division of Endocrinology, Porphyria service and the Lipid Clinic. The Division has a strong interest in the investigation of metabolic disorders, of inherited or acquired nature; with an historical tradition of basic science research. Teaching includes undergraduate (MBChB) and postgraduate courses (MMed, MSc and PhD). The Division also contributes to the teaching in the Division of Medical Biochemistry, Human Biology and Department of Molecular Cell Biology in the Faculty of Science.

Recent research activities covered the molecular genetics of inherited metabolic disorders, and mitochondrial myopathies. The division now also researches dyslipoproteinaemias and disorders of lipid metabolism at a biochemical and genetic level. Individual researchers have established international collaborations. There is also interaction with the University of Stellenbosch division of chemical pathology. The Division hosted supernumerary staff from neighbouring SADC countries (Malawi, Nigeria, Zambia) for the purpose of postgraduate training as it is regarded as one of the premier Chemical Pathology academic units in Africa. Training courses in laboratory methods and laboratory management have been offered. The active academic programme includes CPD-accredited weekly journal clubs, seminars and clinical 'grand rounds'. The division also hosts international guest lecturers under the auspices of the Visiting Lecturer's fund.

The Research Laboratories and expertise have attracted junior and senior colleagues from other specialties and institutions who have been keen to interact with colleagues. Such interaction includes the Department of Medicine (Prof. Bongani Mayosi), and Division of Medical Biochemistry (Prof. Peter Meissner); the Department of Chemical Pathology at the University of Stellenbosch (Prof. Rajiv Erasmus). International links include work on PCSK9 with the University of Nantes (Prof. G Lambert).

# Highlights

# DART

Direct Analysis in Real Time (DART) chromatography is a new development coupled to time of flight mass spectrometry that will revolutionise investigation of small to middle molecules in health and disease. Funding was finally found through the National Lottery Board to diagnose lipid and other metabolic disorders in the country. The system, apparently the first in the country, was acquired through Chemetrix Pty which included an Agilent HPLC and mass spectrometer.

# ABI 310 Sequencer

This machine was donated by the University of Western Australia as they have advanced to modern technology and the machine can still provide excellent service in the investigation of genetic causes of metabolic disease. It will be set in operation in the near future.

# **Divisional Statistics**

# Permanent and Long-term Contract Staff

Professors	1
Emeritus Professors	2
Honorary Professors	3
Medical Natural Scientists	3
Medical Specialists	4
Lecturers	1
Administrative and Secretarial Staff	1
Scientific Officer	1
Technical Officer	1
Departmental Assistants	2
Total	19

# Students

Doctoral	1
Master's	2
M Med Chemical Pathology	2
M Med Clinical Pathology	3
Undergraduate	210
Total	237

# **Research Fields and Staff**

# Permanent Staff

### DR HELEEN VREEDE

Senior Specialist; oversees routine laboratory service at GSH; method development; information technology expertise is provided nationally.

### DR GEORGE VAN DER WATT

Specialist overseeing the routine chemical pathology laboratory and inherited metabolic disease diagnostic service at Red Cross Hospital with an additional interest in chemical pathology of HIV/AIDS, undergraduate and postgraduate teaching, and paediatric biochemistry.

### DR FIERDOZ OMAR

Dr Omar oversees the routine diagnostic and molecular laboratory service at Groote Schuur Hospital. Dr Omar is in charge of the undergraduate teaching portfolio and is responsible for postgraduate teaching. She has a special interest in the role of cell-free DNA in prenatal sex determination. Dr Omar also takes care of the clinical pathology registrar teaching programme.

## DR PHILIP FORTGENS

Dr Fortgens is responsible for various aspects of the routine diagnostics laboratory service at Groote Schuur Hospital, as well as a variety of enzyme assays helpful in the diagnosis of inherited metabolic diseases. He has a further interest in the molecular diagnosis of porphyria and contributes to undergraduate and postgraduate teaching.

# DR JUDY A. KING

Medical Scientist (Principal) and Senior Lecturer. She oversees the radioimmunoassay laboratory (diagnostic and research) in the NHLS laboratory service at Groote Schuur Hospital, performs clinical diagnostic reviewing, registrar training and undergraduate and postgraduate teaching. She supervises postgraduate students with dissertations and clinical biochemistry projects.

### DR PATRICIA OWEN

Dr Owen, a principal medical scientist has continued contributing to the Division after retirement with ongoing interests in inherited metabolic disease including complement C5 and C6 deficiencies, cystinosis, glutaric aciduria type 1 and new born screening. Postgraduate teaching is also undertaken.

### MR DAVID WOOLLEY

Mr Woolley maintains the core laboratory and dedicates most of his time to the Pathology Learning Centre with his expertise in website design.

#### MS FELICITY LEISEGANG

Senior medical scientist contributing to studies on the molecular genetics of galactosaemia, spinal muscular atrophy, cystic fibrosis and limb-girdle muscular dystrophy. She is also involved in PCR studies of tuberculosis, genetic screening in general and postgraduate teaching.

### DR J MCCARTHY

Medical Scientist. The chief interest currently is diagnostic and other investigations relating to therapy in homozygous familial hypercholesterolaemia using fibroblast cultures.

### Dr Dee Blackhurst

Lecturer. The interest in lipid peroxidation has extended work to members of other divisions in this faculty as well as to collaborations with the health science faculty of the University of Stellenbosch. There is increasing interest in HDL metabolism and to document this by nondenaturing electrophoresis. Additionally, paraxonase activity and myeloperoxidase activities are being assayed.

### PROF. DAVID MARAIS

Prof. Marais has a continued interest in severe dyslipidaemias and their genetic causes, including familial hypercholesterolaemia, dysbetalipoproteinaemia and lipoprotein lipase deficiency. Additional interests are in lipoprotein particle size, disturbances of fatty acid metabolism and sterol biosynthesis, especially Smith Lemli Opitz syndrome. Assistance in these projects is received from Ms G Solomon, Ms B Ratanjee and Mr A Mohamed. A joint project has been undertaken with Prof J Parkington of the Division of Archaeology in nutrition with a special emphasis on n- fatty acids.

### PROF. HOWARD HENDERSON

Prof Henderson, retired from active research in metabolic disorders, is assisting with diagnosis of inborn errors of metabolism at the Red Cross Children's War Memorial Hospital laboratory.

# **Emeritus Professors**

### **PROFESSOR E HARLEY**

### **Honorary Professors**

Professor Ishwarlal Jialal; Honorary Professor of Chemical Pathology and Medicine, University of Cape Town; Robert E. Stowell Endowed Chair in Experimental Pathology, Director of the Laboratory for Atherosclerosis and Metabolic Research, and Professor of Internal Medicine, Division of Endocrinology, Clinical Nutrition and Vascular Medicine, at the University of California, Davis, Medical Center. Professor Tahir S Pillay formerly head of chemical pathology at this university, he joined the University of Kwazulu Natal. He was recently appointed as head of Chemical Pathology at Pretoria University.

Professor DB Sacks. A UCT graduate who worked in Chemical Pathology in 1981 before emigrating to the United States. He qualified as an internist and recently joined the National Institutes of Health, Department of Laboratory Medicine, Bethesda, MD, USA.

## **Distinguished visitors**

MR NICK DESMOND-SMITH (29 JULY 2013). CHEMETRIX, DART MACHINE. DR SEBASTIAN BROECKER (29 JULY 2013). CHEMETRIX, DART MACHINE. MR DAVID KOK (29 JULY 2013). CAPE PENINSULA UNIVERSITY OF TECHNOLOGY MS LORNA MARSHALL (29 JULY 2013). CAPE PENINSULA UNIVERSITY OF TECHNOLOGY MR STEVE MCDONALD (20 AUGUST 2013) ACUMEN LABORATORY SOLUTIONS PROF. JOHAN KUYL (20 SEPTEMBER 2013) CHEMICAL PATHOLOGY, UNIVERSITY OF FREE STATE HEALTH SCIENCE FACULTY. DR MAGDALENA TURZNIECKA (20 SEPTEMBER 2013) CHEMICAL PATHOLOGY, UNIVERSITY OF KWAZULU NATAI PROF. NICKY OOSTHUIZEN (20 SEPTEMBER 2013) CHEMICAL PATHOLOGY, UNIVERSITY OF PRETORIA DR JOCELYN NAICKER (20 SEPTEMBER 2013) CHEMICAL PATHOLOGY, UNIVERSITY OF WITWATERSRAND. PROF R ERASMUS (20 SEPTEMBER 2013) CHEMICAL PATHOLOGY, TYGERBERG HOSPITAL. DR CHANTAL DECHASTELLIER (09 SEPTEMBER 2013), CIML, FRANCE. PROTEA PROJECT. DR J VERCHOOR (21 NOVEMBER 2013) UNIVERSITY OF PRETORIA. DR I LEMMER (29 NOVEMBER 2013) UNIVERSITY OF PRETORIA, DR ALAN DENNIS (02 DECEMBER 2013) TORONTO CANADA, ELIZA METHODS

# **Contact Details**

Postal Address: Division of Chemical Pathology, Faculty of Health Science, Private Bag X3, Observatory, 7935 Physical Address: 6.33 Falmouth Building, UCT Health Science Faculty, Anzio Rd, Observatory 7925. Telephone: +27 21 406 6192 Fax: +27 21 448 8150 E-mail: cpy-secretary@uct.ac.za Web: http://web.uct.ac.za/depts/chempath/

# **COMPUTATIONAL BIOLOGY GROUP**

# Head of Group: Associate Professor Nicola Mulder

# **Group Profile**

The University of Cape Town Computational Biology (CBIO) Group is the centre of Bioinformatics activities at the university. It was originally set up as a Node of the National Bioinformatics Network, which aimed to develop capacity in bioinformatics in South Africa, and to perform world-class bioinformatics research. The CBIO Group is located within the Institute of Infectious Disease and Molecular Medicine (IDM) in the Health Science Faculty, and integrates researchers interested in bioinformatics at the university. The mission of the UCT Computational Biology Group is to become an exceptional, internationally recognized research and training center, addressing the challenges of bioinformatics capacity development in South Africa.

The group performs bioinformatics research and provides training and services in the discipline. Research focuses on infectious diseases from both the host and pathogen perspectives, particularly for TB and viral diseases. CBIO uses data mining and systems biology approaches to study the molecular biology and evolution of bacterial and viral pathogens and their interaction with their hosts. Through involvement in H3ABioNet, a pan African bioinformatics network for H3Africa, and the Human Heredity and Health in Africa (H3Africa) initiative, research has also focused on population genetics and GWA studies and the development of new algorithms to analyze the genetics of admixed populations.

CBIO has a large network of connections with other bioinformatics groups in Africa through the African Society for Bioinformatics and Computational Biology and H3ABioNet. The group also has close ties with the African Institute for Mathematical Sciences (AIMS) by supervising student essays.

# **Divisional Statistics**

ASSOCIATE PROF NICOLA MULDER (HEAD OF GROUP) DR DARREN MARTIN (SENIOR LECTURER) AYTON MEINJIES (SOFTWARE DEVELOPER) GERRIT BOTHA (SOFTWARE DEVELOPER) CASHIFA KARRIEM (ADMINISTRATOR)

# Students

Postdoctoral fellows	4
Doctoral	8
Master's	6
Honours	2
Undergraduate	0
Total	20

# **Contact details**

Physical address: UCT Computational Biology Group, Room N1.05, Werner Beit North Building Basement, Institute of Infectious Disease and Molecular Medicine, Anzio Rd, Observatory

# Postal address:

UCT Computational Biology Group, Institute of Infectious Disease and Molecular, Medicine, University of Cape Town Health Sciences Campus, Anzio Rd, Observatory 7925, South Africa e-mail: info@cbio.uct.ac.za web: http://www.cbio.uct.ac.za/

Tel: 021-406 6176 Fax: 021-650 6068

# DIVISION OF FORENSIC MEDICINE AND TOXICOLOGY

(Including the Gender, Health and Justice Research Unit)

# Head of Division: Professor L.J. Martin

# **Divisional Profile**

A large component of operational activity of the Division of Forensic Medicine is that of service delivery. The academic staff are on the joint staff establishment of the University of Cape Town and the WCG: Health; Forensic Pathology Service. This is a fairly new programme of the WCG: Health, established in April 2006, when the responsibility of "mortuary services" was transferred to the Province from SAPS. We are responsible for the medico-legal investigation of death of all persons who die within the Metropol, an area comprising approximately 4,5 million persons, stretching from Atlantis on the West Coast, the Peninsula, the City, to everything south of the N2 up to, but not including, Khayelitsha. Our clinical services are based at Salt River Mortuary and we perform approximately 3500 autopsies per annum.

The Division now has a dedicated research laboratory in the Falmouth Building. We provide a clinical teaching neuropathology laboratory with a specialist neuropathologist. The Division has limited research activities due to our heavy investigative service load, but this is slowly increasing with our new M Phil offering in Biomedical Forensic Sciences.

There are active collaborations with the departments of Anatomical Pathology, Surgery, Obstetrics and Gynaecology, Human Genetics, Paediatrics and Psychiatry; and EMS and the Law Faculty.

A range of activities related to the role of Forensic Medicine in public policy and health promotion are being pursued. These relate specifically to violence against women and children, the role of drugs and toxins in deaths, and firearm injuries. We provide input into the Provincial Injury Mortality Surveillance System (PIMSS).

# **Divisional Statistics**

# Permanent and Long-term Contract Staff

Head: Clinical Department/Professor	1
Head: Clinical Unit	1
Specialists	8
Senior Lecturer / Course Convener	1
Chief Medical Technologist	1
Medical Technologist	1
Administrative and clerical	5
Laboratory Assistant	1
Total	19

# Students

Total	255
Special Study Module – Year 2	10
Undergraduate (LLB) - Final year	40
Undergraduate (MBChB) - Year 5	177
Biomedical Forensic Science (M Phil)	22
Master's (M Med)	6

# **Research Fields and Staff**

# **Permanent Staff**

# PROFESSOR L.J. MARTIN

Head of Clinical Department & Professor: Management protocols for rape survivors; domestic homicide; monitoring implementation of rape law reforms; domestic violence guidelines for the health sector; epidemiology of female murder; aortic disease; indicators for the Lodox Statscan in children; age estimations for children using Lodox statscans; National study of female and children homicide in South Africa; Child Death Reviews.

### DR G.M. KIRK

Head of Clinical Unit & Senior Lecturer: Sudden deaths in sport; firearm injuries; death notification; drugrelated deaths; forensic histopathology; history of forensic medicine.

### DR Y.Y. VAN DER HEYDE

Senior Specialist & Senior Lecturer: The effects of prenatal alcohol exposure; paediatric mortality; animal bites in children; early adolescent suicide, child homicide including child abuse; sudden unexpected death in childhood including SIDS.

### DR L. LIEBENBERG

Senior Specialist & Senior Lecturer: Firearm fatalities and final judicial outcome; aortic disease project; mast cell Tryptase; case studies – curious deaths; atherosclerotic disease prevalence in the Cape Town population; Lodox X-ray application in the forensic setup.

### DR M. HEYNS

Senior Lecturer: Forensic Science; Educational Research; Gross Anatomy; Entomology; Blunt force trauma to the skull

## DR I.J. MOLEFE

Specialist and Lecturer: A 10 year retrospective study of epidemiology and analysis of injury patterns of femicide and rape homicide in Cape Town: A follow-up study.

### DR S. MAISTRY

Specialist and Lecturer: Deaths on Table Mountain: A retrospective analysis 2000-2011.

# DR S. MFOLOZI

Specialist and Lecturer: Development of the NecroChronometer: determining the post-mortem interval using a combination of three methods and location-specific weather information.

### DR E.B. AFONSO

Identifying trends and risk factors for deaths in police custody in the Cape Town Metropole, 1999-2008.

### DR A KHAN

SNP genotypes and skin tone variation in Pregnancy related maternal deaths at Salt River Forensic Pathology Laboratory (SRFPL). A 5 year retrospective study of the epidemiological data and spectrum of pathology and disease in all pregnancy related deaths at SRFPL irrespective of the cause of death.

### DR I.H. ALLI

Forensic Pathologist: Combatting human trafficking; motor vehicle injuries sustained at various speeds; deaths from explosions; review of rape victims in a single Thutuzela Centre over a 5 year period. Research study: Grading the degree of difficulty of post-mortems.

# **Distinguished visitors**

Professor Klaus Püschel, Head of the Institute of Legal Medicine at Universitätsklinikum, Hamburg-Eppendorf, Germany visited the Division of Forensic Medicine on 28 February 2013.

# **Contact Details**

Postal Address: Division of Forensic Medicine, P O Box 13914, Mowbray, 7705 Telephone: +27 21 406 6110 Fax: +27 21 448 1249 E-mail: june.mehl@uct.ac.za; lornaj.martin@uct.ac.za Web: www.forensicmedicine.uct.ac.za

# GENDER, HEALTH AND JUSTICE Research unit

# Acting Director: Dr Kelley Moult (2013)

# Director: Associate Professor Lillian Artz

# **Unit Profile**

The mission of this Unit is to improve service provision to victims of violence against women in South Africa through research, advocacy and education. Drawing together established researchers with a strong record of social-action research in disciplines including law, criminology, forensic sciences and pathology, gynaecology, and psychology, this Unit is the first of its kind in South Africa to respond to the pressing need for research and interventions that cross disciplines in support of our efforts to address the alarmingly high levels of violence against women in this country. The Unit fulfils its mission by conducting rigorous evidencebased research into:

- South African women's experiences of sexual and gender-based violence;
- The responses of women, their communities and the criminal justice, health, and welfare systems to violence against women;
- The intersections and disjunctures between health and criminal justice responses to violence against women;
- The developmental context in which violence occurs, and the role of violence in perpetuating women's under-development;
- The implementation difficulties of translating 'law on paper' into 'law in practice' in health, criminal justice and medico-legal settings;
- The development of indicators for monitoring the implementation of progressive legislation and

compliance by criminal justice and health sector personnel with statutory duties;

- Risk factors and women's pathways to crime and experiences and impacts of female incarceration;
- International and local models of best practice for addressing violence against women.

The Gender, Health and Justice Research Unit was awarded the University of Cape Town's Social Responsiveness Award for 2009.

# **Divisional Statistics**

# **Unit Staff**

Research Staff	7
Associate Research Staff	2
Interns	9
Administrative	1
Total	14

# **Research Fields and Staff**

# ASSOCIATE PROFESSOR LILLIAN ARTZ

Feminist legal theory; women and law reform; sexual offences; domestic violence; research ethics; the medical management of female survivors of violence; incarcerated women; prison reform and torture.

## DR KELLEY MOULT

Feminist criminology; gender-based violence and policy; domestic homicide; forensics, the intersection of traditional and western justice systems, research methods.

### YONINA HOFFMAN-WANDERER

International and comparative law; women's socioeconomic rights; religious and cultural rights; incarcerated women; sentencing.

# KATE ASCHMAN

Policing and law enforcement; sexual offences and HIV; human rights; gender-based violence and incarcerated women.

### TALIA MEER

Gender-based violence, women's rights, LGBTI rights, access to justice, rural development, and political ecology

# TSITSI MPOFU-MKETWA

Women's empowerment, rural development, urban poverty, social justice and social inclusion.

#### CARMEN CORRAL-BULNES

Gender-based violence, incarceration, women's mental

health, domestic homicide and aggressive behaviour in intimate relationships.

# **Research Associates**

# PROFESSOR JEANNE FLAVIN (FULBRIGHT SCHOLAR – FORDHAM UNIVERSITY)

The impact of the criminal justice system on women; social and civil rights of women; reproductive rights.

# HELENE COMBRINCK (UNIVERSITY OF THE WESTERN CAPE)

Disability law and policy, domestic violence and disability.

# Administration

## MILLICENT KEEN

# Interns

LOUISE CARMODY (FACULTY OF LAW, UCT) CHLOË MCGRATH (DEPARTMENT OF CRIMINAL JUSTICE, UCT) KATERIINA MATILLA (JOHNS HOPKINS UNIVERSITY) EMILY COLPITTS (DALHOUSIE UNIVERSITY) DAPHNE D'CRUZ (UNIVERSITY OF MONTREAL) GINA SCHULZ (UNIVERSITY OF MICHIGAN) NIDA ABBASSI (UNIVERSITY OF MICHIGAN) LORNA MORRIS (UNIVERSITY OF NORTH CAROLINA – CHAPEL HILL) HAEKYUNG HUM (GOVERNMENT OF SOUTH

# **Contact Details**

KOREA)

Postal Address: Gender, Health & Justice Research Unit, Entrance 1, Level 1, Falmouth Building, Faculty of Health Sciences, UCT, Anzio Road, Observatory, 7925 Telephone: +27 21 406 6024 Fax: +27 21 406 6020 E-mail: mrd-gender@uct.ac.za or kelley.moult@uct. ac.za Web: http://www.ghjru.uct.ac.za

# DIVISION OF HAEMATOLOGY AND UCT LEUKAEMIA UNIT

# Head of Division: Professor Nicolas Novitzky

# **Divisional Profile**

# **Diagnostic Services**

The Division of Haematology at Groote Schuur Hospital is a complex unit with multi- disciplinary activities that include outpatient clinics, admission beds as well as diagnostic and research laboratories. The clinical services are organised under the umbrella of the Department of Internal Medicine, while the laboratory diagnostic sections are under the broader organisation of the Department of Clinical & Laboratory Sciences and National Health Laboratory Service (NHLS).

The laboratory continues to offer comprehensive diagnostic testing for the diagnosis and management of all haematological malignancies. It also offers diagnostic services for a Comprehensive Haemophilia Centre, as well as to a number of tertiary / quaternary programs. This laboratory also acts as a tertiary referral centre for local hospitals and outlying clinics of the Western Cape, as well for referral samples from the Eastern Cape. The routine diagnostic and molecular haematology laboratories were again successfully accredited by SANAS. Dr Wilhelm van Schalkwyk has been appointed as the Haematology pathologists at Red Cross Hospital and took over from Dr Margie Shuttleworth who retired last year.

# **Teaching and Training**

The department remains a primary teaching and training site for medical technologists, technicians, undergraduate medical students of the University of Cape Town and registrars in Haematopathology and Clinical Haematology. Currently there are five haematology pathology registrars one Clinical Pathology and Clinical Haematology registrar who are enrolled in the UCT postgraduate program.

Dr Karen Shires continues to provide training in the molecular haematology course for haematology registrars and technologists together with Ms Iva Shankland. Dr Karen Shires and Ms Iva Shankland have provided PCR and DNA lectures/practicals for Anatomical Pathology registrars. Dr Karen Shires is part of a team who have developed the Molecular Forensic MSc course. She is the Forensic Genetics course convener. Dr Shaheen Mowla is involved in the following Undergraduate Teaching: MBChB Intercalated Molecular Medicine course: Basic cell structure and function; Cell Cycle; Cell Stress responses and cell death mechanisms; Restriction Enzymes and Electrophoresis; MBChB Semester 2: Histology of the skin; MBCHB Semester 3: Histopathology of the skin.

## **Haematology Research Projects**

#### DR KAREN SHIRES

Novel diagnostic, prognostic and MRD assays for haematological malignancies; cancer testis expression in Multiple Myeloma.

### PROF NICOLAS NOVITZKY

Immunomodulation of stem cells for transplantation.

### DR SHAHEEN MOWLA

Molecular Biology of Cancer; Burkitt's lymphoma and HIV; Role of activation-induced cytidine deaminase in cancer; miRNA in cancer

# DR L A DU PISANI

Malaria diagnosis, Western Cape, managed and the outcome.

### DR JESSICA OPIE

HIV-Associated Burkitt Lymphoma and Antiretroviral Therapy; HIV-Associated Hodgkin Lymphoma.

# **Divisional Statistics**

### Permanent and Long-term Contract Staff:

Professor	1
Clinical Service	
Senior Specialists	2
Clinical Registrars	
Senior House Officers	2 2 2
Chief Professional Nurse	2
Administrative and clerical staff	3
Diagnostic Service	
Senior Pathologist	1
Pathologists	2
Pathologist part-time	1
Scientist	1
Pathology Registrars	5
Laboratory Manager	1
Medical Technologists	14
Student Medical Technologists	3
Technicians	4
UCT Leukaemia Unit	
Scientist	1
Research Officer	1
Research Technologist	1

Clinical Research Co-Ordinator	1
Administrative and clerical staff	1
Laboratory assistants (medical school)	2

# Students

Doctoral	1
Master's	7
Honours	1
MMed	1
Mphil	1
Total	11

# **Research Fields and Staff**

Professor Nicolas Novitzky

Haematopoietic stem cell biology; clonogenic assays; haematopoietic stem cell transplantation; immune reconstitution; haematological malignancies

Dr Cecile du Toit Haematopoietic stem cell transplantation; haematological malignancies; haemophilia

Dr Estelle Verburgh Haemophilia; thrombophilia; stem cell transplantation

Dr Jessica Opie Molecular biology of neoplasia: chronic myelogenous leukaemia; coagulation abnormalities

Dr Karen Shires Molecular biology and diagnostics

Dr Shaheen Mowla Minimal residual disease and flow cytometry.

Mrs Rygana Abdulla Cellular biology of neoplasia; clonogenic assays

# **Contact Details**

Postal Address: 6<sup>th</sup> Floor, Chris Barnard Building, Anzio Road, Observatory, 7925 Telephone: +27 21 406 6154/404 3073 Fax: +27 21 448 8607 E-mail: Coleen.Fredericks@uct.ac.za Web : http://web.uct.ac.za/depts/haem/

# **DIVISION OF HUMAN GENETICS**

Including the MRC/UCT Human Genetics Research Unit and

CANSA's National Colorectal Cancer Research Consortium

# Head of Division: Professor Raj S. Ramesar

# **Divisional Profile**

The Division is unusual in that it conducts its business through three interacting 'institutions':

- 1. an extensive clinical service through the Provincial Government of the Western Cape;
- 2. its laboratory diagnostic services through the National Health Laboratory Services, and
- 3. Its academic (research and teaching) activities through the University.

The UCT/MRC Human Genetics Research Unit was created while the Human Genome Project was underway. The mandate for this Unit was (i) primarily one of capacity development in the field of Genetics and Genomics, (ii) understanding the relevance of developments in genetics and genomics, as they may be applicable to South Africans, and (iii) the translation of research to the clinical environment.

An emphasis of this Unit is the investment in understanding the rich Human Diversity on our continent and relating this to disease and health. In this regard there has been a head-on engagement with state of the art high-throughput genetic studies of indigenous southern African population populations, which has resulted in the empowerment and capacity development of South African researchers in large scale data handling and analysis. The Division is also in involved in several Human, Hereditary and Health Africa projects in networks spanning the continent (www. h3africa.org), and which are funded by the National Institutes of Health (USA) and the Wellcome Trust (UK).

A further investment has been in taking genetics to the 'clinical' high street. A measure of relevance and success of the Unit in this regard, is its attraction to other mainstream clinical practitioners e.g. from the disciplines of Gastroenterology, Nephrology, Internal Medicine, Psychiatry, Surgery, and Dentistry (UWC) who are completing PhDs in Genetics, in this Unit. A substantial effort has been made into introducing genetics/genomics into the undergraduate MBChB curriculum and to specialist groups.

# **Divisional Statistics**

# UCT Staff

Professors	2
Emeritus Professors	1
Associate Professor	1
Research Staff	7
Chief Scientific Officer	1
Administrative and Secretarial Staff	2
Departmental Assistants	1

Part Time Staff	4
PGWC Personnel	4
PGWC/UCT Personnel	3
NHLS Personnel	11
Honorary Staff	4
Total	26

# Students

Postdoctoral fellows	4
PhD	15
Master's	12
Honours	8
Total	39

# **Research Fields and Staff**

## PROFESSOR RAJ S. RAMESAR (UCT/PGWC)

Head of Division and Personal Chair Director: MRC Human Genetics Research Unit Chairman: NGO The Africa Genome Education Institute Principal Investigator: Genetics of Bipolar Disorder; Genetics of Retinal Degenerative Disorders; Molecular Genetics of Complex Disorders; Pharmacogenetics – Adverse Drug Reactions in Cancers

# PROFESSOR JACQUIE GREENBERG (UCT)

Principal Investigator: Genetics of Neurological Disorders; Genetics of Neuromuscular Disorders Co-Principal Investigator: Genetics of Retinal Degenerative Disorders

### EMERITUS PROFESSOR PETER BEIGHTON

Principal Investigator: Genetics Connective Tissue Disorders

# HONORARY PROFESSOR WILMOT JAMES

### HONORARY PROFESSOR MATTHEW WOOD

Co-investigator: Genetics of Neurological Disorders

# **Honorary Senior Lecturers**

DR LEON JEDEIKIN DR SOLLY ZIEFF

# ASSOCIATE PROFESSOR AMBROISE WONKAM (UCT)

Principal Investigator: Phenotypic correlation of sickle cell anemia to genotypic variations; Genetics of Deafness

ASSOCIATE PROFESSOR COLLET DANDARA (UCT)

Principal Investigator: Pharmacogenomics

# DR KAREN FIEGGEN (PGWC / UCT)

Senior Specialist: Principal Investigator: X- linked Mental Rretardation; Bardet-Biedl Syndrome

### MRS. THERESA RUPPELT (NHLS)

Laboratory Manager: Cytogenetics

# **Contact Details**

# Postal Address:

Division of Human Genetics, Department of Clinical Laboratory Sciences, Level 3, Werner

and Beit North Building; Institute for Infectious Diseases and Molecular Medicine, Faculty of

Health Sciences, University of Cape Town, 7925, Observatory

Telephone: SA (21) 406 6297; Fax: SA (21) 406 6826/650 2010

# **DIVISION OF IMMUNOLOGY**

# Head of Division: Professor Clive Gray, PhD.

# **Divisional Profile**

The Division of Immunology is involved with a range of activities from identifying the basic mechanisms of immunity in infectious disease to immunology diagnostic testing in the National Health Laboratory Services (NHLS) at Groote Schuur Hospital. The vision statement for the Division of Immunology is "Driving Science to promote World Health" and a detailed strategic document outlining the next 5-10 years has been formulated. Part of the mission is to formulate and introduce Immunology as a curriculum subject for MBChB undergraduate students. In 2013, an 8-lecture course was introduced to the 1st year undergraduate students in semester 2 covering the basics of molecular and clinical immunology. Numerous staff are also either Full or Associate members of the Institute of Infectious Disease and Molecular Medicine (IDM) and there is a very integrated relationship between the Division of Immunology and the IDM

Basic Research: The DOI houses the UCT/MRC Unit on Immunology of Infectious Diseases, an Allergy Section and the SARCHi chair on 'Immunology of infectious diseases in Africa'. The Division has an internationally recognized expertise in generating transgenic mice, for use in a wide range of immunological studies applicable to communicable and non-communicable diseases. These have been used to make important advances in diseases, such as Tuberculosis, Bilharzia, African Trypanosomiasis, Candidiasis and cutaneous Leishmaniasis and have contributed significantly to identifying fundamental cellular and molecular immunological mechanisms. Together with international and national collaborations, these animal tools contribute to many advances in Immunology and other fields. Basic research in the Allergy Section has focused on the role of IL-4 and IL-13 in allergy as well as the application of novel assays to identify sensitivity profiles. There are very close ties with the South African component of the International Centre for Genetic Engineering and Biotechnology, providing a very strong genomics thrust to the Division.

<u>Translational Research</u>: There is also a strong clinical immunology emphasis in the Division, specifically in HIV and TB immunology where studies are underway to understand adaptive and innate immune responses during acute HIV infection and in infants exposed to HIV in utero and upon receiving different childhood vaccinations. Successfully funded grants have been garnered from the Canadian Institute of Health Research and the South African Department of Science and Technology for investigating the link between breastfeeding practices and newborn infant immune activation status, which may mitigate EPI responses. Understanding the link between HIV-induced inflammation and autoimmunity, where peripheral tolerance has been broken, is also a new direction within the Division.

NHLS activities: The combined functions of the Laboratory for Tissue Immunology (LTI) and the Clinical Immunology and Allergy Laboratory are responsible for providing NHLS activities. The LTI is responsible for HLA class I and class II typing for solid organ and bone marrow/stem cell matching. The Laboratory also performs cross-matching and pre-formed antibody testing for renal transplantation. The LTI is accredited with the European Federation of Immunogenetics (EFI) and is the only such accredited laboratory in South Africa. The Clinical Immunology and Allergy Laboratory performs routine diagnostic testing for autoantibodies and different allergies. The DOI plays a leading role in the Immunology Expert Committee, which has formulated a new workload model for immunology services within the NHLS. The major task for the Expert Committee over the next year will be to formulate a national immunology curriculum so that immunology can become a registered medical specialist discipline.

<u>Teaching:</u> The Division has an active teaching component in the medical undergraduate syllabus and provides cutting edge lectures on the basics of the immune system and integrates immunology concepts and principals with the case studies and problem based learning approach by the Health Sciences Faculty. More advanced courses are offered at the post-graduate level through the Honours in Infectious Disease and Immunology programme and the short semester Research Immunology Course for postgraduate students. The Division also holds workshop on infectious disease and immunology and specifically train students from other countries in Africa on advanced immunology related techniques and cutting-edge science.

International Links: There are very strong links between staff in the Division with international collaborators on all continents in both basic and applied research.

# **Divisional Statistics**

# Permanent & Long Term Contract Staff (UCT/ NHLS)

Professors	2
Associate Professors	1
Lecturers	2
Research Staff	7
Technical Staff	6
Technical Support Staff	5
Administrative Staff	2
Total	25

# Students

Postdoctoral research fellows	12
Doctoral	19
Master's	10
Honours	5
Total	46

# **Research Fields and Staff**

# Academic Staff

# PROFESSOR CLIVE GRAY, PHD

Professor of Immunology

Wernher Beit Chair and HODv Immunology, Joint UCT/ NHLS

Full member of the IDM and member of Exco; B rating by NRF; Research Profile: Immunology of HIV infection and antigen-specific T cell responses during acute infection.

## PROFESSOR FRANK BROMBACHER, PHD

Professor of Immunology

UCT Fellow; SARCHi Chair, Director of an MRC Unit; ICGEB Coordinator & Group leader, Member of IDM; A1-rating by NRF; Research profile: Immunology of infectious diseases, including Tuberculosis, African Trypanosomiasis, Leishmaniasis, Bilharzia and other Helminth infections.

### A/PROFESSOR MUAZZAM JACOBS, PHD

NHLS Medical Scientist and UCT A/Professor; Full member of the IDM. Research profile: Understanding host pathogen interaction and associated immune mechanisms that bring about protection against tuberculosis infection.

### DR WILLIAM HORSNELL PHD

Senior Lecturer. Associate member of IDM. C2 NRF rating. Convener of IDI Honours postgraduate degree. Research profile: Immunity to helminth infections. Maternal and co-infection immunity. Acetylchoine signalling in the immune system.

## DR HEATHER JASPAN MD, PHD, FAAP

Senior Lecturer. Associate member of the IDM. Research Profile: Investigating immune activation, T cell immunity and susceptibility to HIV in infants.

# **Visiting Professors**

### PROF GUIDO FERRARI

Professor, Duke University Medical Center, Durham, North Carolina, USA

Identifying CD8+ T cell activation, functional profile, and memory differentiation during acute HIV infection and role in in determining HIV escape mutants. Identifying epitope targeted by ADCC-mediating Antibody responses and their role in protection from infection.

### PROF JIM ALEXANDER

Strathclyde University, Scotland

# **Postdoctoral Fellows**

### DR LYCIAS ZEMBE

Understanding CD8+ T cell recognition patterns in HIV infection

### DR SURAJ PARIHAR

Dr Reto Guler Investigate using 4 different pathogens, i.e. Listeria monocytogenes, mycobacteria tuberculosis, mycobacteria bovis BCG, and Leishmania major

### DR ROANNE KEETON

TB Immunology

### DR FRANK KIRSTEIN:

Investigation of immune responses in different mouse models of allergic asthma"

#### DR TIROYAONE BROMBACHER

Neuro-immunological effects of Nippostrongylus brasiliensis on cognitive function.

### DR ROANNE KEETON:

The role of TNFR signalling in pulmonary tuberculosis

### DR JENNIFER CLAIRE HOVING

Asthma and Allergy

# **Distinguished Visitors**

HARUKAZU SUZUKI, RIKEN INSTITUTE-JAPAN DANIEL BARBER, MAX PLANCK, GERMANY MARTIN BACHMANN, CYTOS, SWITZERLAND CLAUDIA JAKUBZIC, VIRGINIA, USA MATTIAS SVENSSON, KAROLINSKA INSTITUTE, SWEDEN BENJAMIN MARSLAND, ETH ZURICH, SWITZERLAND GORDON BROWN, UNIV ABERDEEN, UK LUISA MARTINEZ, POMARES UNIV NOTTINGHAM, UK JIM ALEXANDER, UNIV STRATHCLYDE, UK ANDREW MCDONALD, UNIV EDINBURGH, UK ABHAY SATOSKAR, OHIO STATE UNIVERSITY, USA MICHAEL PEPPER. UNIVERSITY OF PRETORIA, SA JOHANNA SPAANS, UNIVERSITY OF OTTAWA STEFAN MAGEZ, VRIJE UNIVERSITY, BELGIUM BLANKA VIDAN-JERAS, SLOVENIA DEBRA ROSA, CSIR GOTFRIED ALBER, UNIV OF LEIPZIG, GERMANY MUSA MHLANGA, CSIR, PRETORIA THOMAS HEUNIG, UNIVERSITY WUERZBURG, **GFRMANY** BERNHARD RYFFEL, UNIVERSITY OF ORLEANS, FRANCE S. BARTH, UNIV. FRAEUENHOFER, GERMANY

# **Contact details:**

Tel: 406-6616 Fax: 406-6029 Email: dhuraiyah.abdullatief@uct.ac.za

# **DIVISION OF MEDICAL BIOCHEMISTRY**

# Head of Division: Professor Peter Meissner

# **Divisional Research Profile**

The Division of Medical Biochemistry is a preclinical, basic science division in the UCT Faculty of Health Sciences and is associated, either wholly or partly, with a number of advanced research entities. Some such entities are laboratory research groups contained entirely within Division, while some have certain components or personnel falling within the Division, affiliated to other Institutes or Departmental groupings.

Specifically: The Division incorporates the MRC/UCT Research Group for Receptor Biology (co-directed by A/Prof Arieh Katz and Dr Colleeen Flanagan, ex-UCT now at WITS, and Prof Bob Millar, Senior Scholar in our Division); the UCT Structural Biology Research Group (directed by Prof Trevor Sewell); members of the Institute of Infectious Disease and Molecular Medicine (IIDMM) at UCT (Profs Sturrock, Blackburn, Meissner, Parker, Katz and Leaner); and the International Centre for Genetic Engineering and Biotechnology (ICGEB) (Prof Iqbal Parker).

Through 2013 there were 47 research postgraduate students registered for either Master's or PhD (53 in 2012), and a further 9 Honours students were based wholly in Medical Biochemistry for the duration of their research projects (April – November) (11 in 2012). The Division graduated 3 PhD and 6 MSc students during the course of 2013 (4 PhD and 2 MSc during 2012). Together with various scientific and academic staff our postgraduate students and 22 postdoctoral fellows (20 in 2012) continued to form the basis of a vibrant and on-going research thrust and culture in the Division, forming the core of our Divisional research strategy - out of which flows a contemporary and effective approach to teaching at both under- and post-graduate levels. During 2013 the Division and its' affiliates published 69 papers in ISI accredited science journals, and 4 nonaccredited journal articles. Research activities of the Division cover seven major areas:

- GnRH receptors, signalling, structure function and as a target for development of therapeutics for treatment of reproductive cancers (Katz & Millar labs);
- 2. Molecular mechanisms of cervical cancer and oesophageal cancer development and progression (Leaner, Hendricks and Parker labs)
- 3. Identification and characterisation of anticancer drugs in natural products (Hendricks lab);
- 4. Angiotensin converting enzyme (ACE) structure activity relationships and development of

ACE inhibitors (drug design) for treatment of hypertension, congestive heart failure, myocardial infarction and renal disease (Sturrock lab);

- 5. Application of functional proteomics for diagnostics, drug and vaccine development for infectious disease and cancers (Blackburn lab).
- Diagnostic, structure and function studies in the porphyrias and haem biosynthesis (Meissner lab – currently sited and staffed in the Dept. of Medicine)
- 7. Structural basis for differential regulation of glutamine synthetase in humans and the malaria parasite, structural studies on the nitrilase family of enzymes in the context of cancer, mycothiol synthetic pathway in *Mycobacterium tuberculosis* (Sewell lab- currently located on UCT upper campus)

Physical space for the Structural biology research Unit and the Porphyria labs remain a problem.

Research staff members, fellows, postgrad students participated in many local and international conferences during the year. Our Division considers such travel essential and worthwhile in that they give rise to new collaborations and maintenance of established collaborations and lab research visits.

# **Divisional Statistics**

Professors	5
Professor (emeritus) appointed as Senior	1
Scholar	
Professors on establishment but working in	1
affiliated Institutions	
Associate Professors	З
Senior-Lecturers	0
Technical Support Staff	4
Departmental Assistants	3
Administrative Staff	1
Total	18

# **Honorary Staff**

Honorary Professor	1
Honorary Associate Professor	1
Honorary Senior Lecturers	2
Honorary Research Associate	1
Total	5

# **Students & Fellows**

Postdoctoral fellows	22
Research students:	
Doctoral	30
Master's	17
Honours	9
Undergraduate students	626
Total	704

# Research fields and staff

# Professors:

# J M BLACKBURN, BSC (HONS) DPHIL

Oxon (South African Research Chair) Proteomics and genomics for diagnostics, drug and vaccine development for infectious disease and cancers

# P N MEISSNER, BSC(MED)(HONS)

PhD Cape Town (Fellow of UCT) Haem biosynthesis, disorders of porphyrin metabolism

# E D STURROCK, BSC (MED)(HONS) PHD CAPE TOWN

Angiotensin converting enzyme (ACE) structure activity relationships and drug design related to ACE inhibitors for treatment of hypertension, congestive heart failure, myocardial infarction and renal disease

# B T SEWELL, MSC WITWATERSRAND, PHD LONDON.

Structural biology related to regulation of glutamine synthetase in humans and the malaria parasite, nitrilases in the context of cancer, mycothiol synthetic pathway in *Mycobacterium tuberculosis*)

# A A KATZ, PHD REHOVOT

Gonadotropin-Releasing Hormone (GnRH) receptors: function regulation and ligand receptor interactions; role of cyclooxygenases and prostaglandins in cervical cancer and uterine pathologies

# R P MILLAR PHD, FRCPATH (CHEM), FRSE (LIFE FELLOW OF UCT)

Endocrine receptor and molecular biology

# Professors (working in affiliated Institutes):

# M I PARKER, BSC(HONS) PHD CAPE TOWN (MASSAF

(based in the International Centre for Genetic Engineering and Biotechnology – ICGEB, Cape Town) Cellular and molecular biology of cancer; Regulation of gene expression in cancer

# **Associate Professor:**

DENVER HENDRICKS, BSC(HONS) PHD CAPE TOWN Molecular biology of oesophageal cancer and development of novel chemotherapeutic drugs

VIRNA LEANER, BSC(HONS) PHD CAPE TOWN Molecular mechanisms associated with the development and treatment of cervical cancer

# CYNTHIA SIKAKANA, BS WESLEYAN PHD WISCONSIN-MADISON

Medical education, Metabolism of xenobiotics

# **Honorary Professor**

C. SEOIGHE, PHD DUBLIN W-D SCHUBERT, PHD BERLIN

## **Honorary Associate Professor**

LUIZ ZERBINI, MSC PHD SÃO PAULO BRAZIL

### **Emeritus Associate Professor:**

L R THILO, MSC UNIVERSITY OF PRETORIA DR RER NAT Heidelberg

## **Honorary Senior Lecturers:**

HENRY JABBOUR, PHD SYDNEY G protein – coupled receptors in reproductive biology and HIV

COLLEEN FLANAGAN, PHD CAPE TOWN Cyclooxygenases in gynaecological cancers

# Honorary Research Asssociate:

ARVIND VARSANI, PHD CAPE TOWN. KURT SALES, PHD CAPE TOWN.

# **Postdoctoral fellows:**

PAULINE VAN DER WATT ANDREW JM NEL PUTUMA GQAMANA **BRANDY YOUNG** KATE HADLEY YABING WANG ARON ABERA **VICTOR FRANCIS ROSS ANDERSON** CLAIRE NEWTON JACQUELINE BRACHER JEREMY WOODWARD ALBERT ABRIE SERAH KIMANI LISELOTTE ANGUS **REBECCA TADOKERA BEVERLEY VAN ROOYEN ROBERT NDORIA THUKU** JOSEPH RAINMONDO AFOLOKE AROWOLO SIKIRU JIMOH SANKAR RAMACHANDRAN

# Chief scientific officer:

# SYLVA SCHWAGER, MSC

Proteolytic processing of membrane proteins

# **Research Officer:**

# GEORGIA SCHÄFER (KATZ/MILLAR LAB, IIDMM)

# **Contact Details**

Division of Medical Biochemistry, Dept. of Clinical Laboratory Sciences, Level 6, Room 6.07, Falmouth Building,UCTMedicalSchool,AnzioRd,Observatory,7925 Cape Town, SOUTH AFRICA Tel: 021 404 7712 (Secretary) 021 406 6206 (Head) Fax: 021 4066061 E-mail (Head): Peter.Meissner@uct.ac.za

# **MEDICAL MICROBIOLOGY**

# Head of Division: Professor Mark Nicol

# **Divisional Profile**

The Division of Medical Microbiology (www. medmicro.uct.ac.za) encompasses a tertiary diagnostic microbiology service, provided by the National Health Laboratory Service, Groote Schuur Hospital and an active research programme based at the Health Sciences Campus.

We aim to conduct research that is relevant to the needs of diagnostic microbiology services and focused on important infectious diseases in South Africa. This includes work on childhood febrile illness (pneumonia, meningitis and diarrhoea), the origin and evolution of the human microbiome in early childhood, the development and assessment of novel diagnostics for tuberculosis, the epidemiology of drug-resistant tuberculosis as well as the transmission and molecular epidemiology of drug resistant pathogens within our hospitals.

The Division is the academic home of the highly regarded Molecular Microbiology Research Unit (www. mrc.ac.za/mycobacteriology/mycobacteriology) headed by Professor Valerie Mizrahi and Dr Digby Warner which aims to develop and apply genetic tools for the identification, validation and characterisation of novel drug targets and vaccine candidates for tuberculosis. The Division is also the home of Professor Gregory Hussey who leads the 'Vaccines for Africa' Initiative (www.vacfa.com) which is a partnership of concerned individuals and organizations who have come together with the expressed purpose of increasing awareness of and promoting uptake of vaccines on the African continent. Two Wellcome Trust Fellows (Dr Helen Cox, Intermediate Fellow and Dr Mamadou Kaba, Research Training Fellow) are based in the Division.

The Division has been successful in attracting substantial research funding from the Wellcome Trust, EDCTP, National Institutes of Health, Carnegie Foundation, Howard Hughes Medical Institute and Bill and Melinda Gates Foundation in recent years. 2013 was a successful year for research in the Division, with the award of two Wellcome Trust Fellowships and 30 publications, including publications in high impact journals.

The composition of the Division is complex with staff drawn from the University of Cape Town, Groote Schuur Hospital and the National Health Laboratory Service and National Institute for Communicable Diseases. This mix of pathologists, scientists and students offers the opportunity for creative, cross-disciplinary research.

# **Divisional Statistics**

# Permanent and Long-term Contract Staff

Professors	3
Senior Lecturers	4
Lecturers	2
Clinical Research Officer	1
Research Assistant	3
Senior Research Officer	2
Administrative and Clerical Staff	1
Project Manager	1
Lab Manager	1
Data Management staff	3
Clinical staff	4
Technologists	2
Technical Support Staff	1
Total	28

# **Honorary Staff**

Honorary Lecturers
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# Students

Postdoctoral	3
Registrars	3
Doctoral	8
Master's	6
Undergraduates (Sem 3,4 and 5)	429
Total	446

# **Research Fields and Staff**

# **Permanent Staff**

## PROFESSOR MARK P NICOL

Development and evaluating point-of-care tests for tuberculosis; the strain biology of *Mycobacterium tuberculosis*; the origin and evolution of the human microbiome in early childhood and its impact on respiratory illness.

## PROFESSOR GREGORY HUSSEY

Understanding the dynamics of TB infection and disease in adolescents; the epidemiology of TB in infants and young children; evaluation of new TB vaccines

## PROFESSOR VALERIE MIZRAHI AND DR DIGBY WARNER

Investigate fundamental aspects of the metabolism and physiology of *Mycobacterium tuberculosis* of relevance to tuberculosis drug discovery and drug resistance

# DR C BAMFORD

Laboratory detection of multi-resistant organisms; molecular epidemiology of hospital acquired infections; rational use of antibiotics and surveillance of antimicrobial resistance; appropriate use of microbiological investigations; microbiological diagnosis of tuberculosis

### DR LOURENS ROBBERT

Enhanced surveillance for shiga toxigenic *Escherichia coli* in stool specimens from the Western Cape.

# DR CLINTON MOODLEY

Carbapenemase Surveillance

# **Registrars, Joint Appointments**

DR SINDILE NTULI DR CHAD CENTNER DR HAFSAH TOOTLA

# **Honorary Staff**

### A/PROFESSOR DAVID LEWIS

- Gonococcal resistance
- STI surveillance
- Men's sexual health

### DR JOHN SIMPSON

Laboratory diagnosis of tuberculosis and identification of drug-resistance

# Fixed-term appointment staff

# DR HELEN COX (WELLCOME TRUST INTERMEDIATE FELLOW)

A systems approach to evaluating prospects for the control of drug-resistant tuberculosis in Khayelitsha, South Africa

### DR WIDAAD ZEMANAY

Evaluation of novel diagnostic methods for tuberculosis in adults and children; evaluation of the impact of novel TB diagnostics on patient outcomes

# DR LEMESE AH TOW EDRIES

- The evaluation of inter-seasonal house dust microbiota in the Western Cape, South Africa
- Molecular detection of *Helicobacter pylori* in stool of apparently healthy children, the Drakenstein sub-district, South Africa

### DR LINDY DICKSON-HALL

Linkage to Care for drug resistant TB patients following Xpert implementation in SA.

# **Postdoctoral fellows**

# DR ELLOISE DU TOIT

Household dust microbial burden and the development of recurrent wheezing in children in the Western Cape: a cohort study

## DR MAMADOU KABA

- The faecal microbial community and its association with wheezing illness in young Children – The Drakenstein Child Lung Health Study, South Africa
- Phenotypic and genomic study of the antibiotic resistome in a paediatric population, Drakenstein sub-district, South Africa
- Dynamics of faecal bacterial populations in early infancy as determined by massively parallel sequencing
- Epidemiology of extended spectrum betalactamase and carbapenemase-producing bacteria in apparently healthy children, South Africa

### DR VERONICA ALLEN

Sequencing and identifying rifampicin discordant results from Gene Xpert

# **Contact Details**

Postal Address: Division of Medical Microbiology, University of Cape Town, Medical School, Anzio Road, Observatory, 7925 Telephone: +27 21 406 6727

# **DIVISION OF MEDICAL VIROLOGY**

# Head of Division: Professor Carolyn Williamson

# **Divisional Profile**

The Division of Medical Virology contributes to the diagnosis, treatment, prevention and eradication of viral diseases in South Africa through a diagnostic laboratory service together with a dynamic research programme.

Research within the Division focuses on Human Immunodeficiency Virus (HIV), Human Papillomavirus (HPV), virus discovery and vaccinology, and is largely performed within the Institute of Infectious Diseases and Molecular Medicine. The division has contributed to research on HIV prevention, transmission and pathogenesis (including research on broadly crossneutralizing antibodies; HIV superinfection; the impact of mucosal inflammation and other sexually transmitted co-infections on HIV transmission risk; and HIV vaccine and microbicide development); and HPV natural history in South Africa and next generation sequencing discovery of novel HPVs. There has also been research on BCG and poxviruses as vaccine vectors. The division hosts one NRF Research Chair (Professor Anna-Lise Williamson, Vaccinology).

The Virology Diagnostic Laboratory is a SANAS accreditation facility within the National Health Laboratory Service, and is located at Groote Schuur Hospital (GSH). It provides a comprehensive service to both GSH and Red Cross Children's Hospital, and serves as a regional reference centre providing a clinical and diagnostic service to local teaching hospitals and surrounding public health clinics.

The division contributes to undergraduate teaching and plays a major role in post-graduate training and currently hosts 31 post-graduate students (registered for, MMed, MSc, PhD or Postdoc degrees).

# Special awards / honours / promotions

- Carolyn Williamson was accepted as a Fellow of UCT
- Diana Hardie was promoted to Associate Professor
- Gerald Chege was promoted to Senior Research Officer
- Shaun Barnabas was awarded MRC National Health Scholars Program Scholarship for Clinical Research 2014
- Shaun Barnabas was awarded Fogarty Training Fellowship 2013

- Colin Anthony was awarded a Fogarty Postdoctoral Fellowship 2013
- Tracy Mering was awarded a Carnegie Postdoctoral Fellowship 2013
- Gama Bandawe, Ruby Bunjun, Shivan Chetty and Kristy Opperman were awarded Carnegie PhD scholarships
- Ruby Bunjun and Gama Bandawe were awarded prestigious CAPT (Canada-Africa Prevention Trials Network) Academic Scholarship awards for 2013
- Colin Anthony received a Clinical Infectious Diseases Research Initiative (CIDRI) equipment award for a Bio Rad QX200 droplet digital PCR (ddPCR) system
- Ruby Bunjun and Kristy Offerman won third prizes for the oral presentation and poster presentation respectively at the Faculty Postgraduate Research Day

# **Distinguished visitors**

- Prof Robin Shattock, Imperial College London, UK
- Prof Francesca Chiodi, Karolinska Institute, Stockholm, Sweden
- Prof Tom Hope, Northwestern University, Chicago, USA
- Dr Kelly Arnold, MIT, USA
- Dr Andy Redd, NAID

# **Divisional Statistics**

# Permanent and Long-term Contract Staff

Professors	4
Academic	13
Research and Technical Support Staff	13
Administrative and Clerical Staff	3
Total	34

# **Honorary Staff**

Honorary Senior Lecturer	1
Honorary Research Associate	1

# Students

MMed	3
Postdoctoral	8
PhD	13
M.Sc.	6

# **Research Staff and Fields**

# **Emeritus Professor**

## PROFESSOR KEITH DUMBELL

# Academic Staff

### PROFESSOR CAROLYN WILLIAMSON (UCT/NHLS)

HIV diversity and pathogenesis; HIV-1 vaccine development – Head of Division.

## PROFESSOR ANNA-LISE WILLIAMSON (NHLS/UCT)

Human Papillomavirus; Poxviruses, Vaccinology, Microbiomics, Viromics

### ASSOCIATE PROFESSOR DIANA HARDIE (NHLS/UCT)

Viral infections in the immuno-compromised host; Molecular biology of Hepatitis B Virus – Head Diagnostic Virology Laboratory.

# ASSOCIATE PROFESSOR JO-ANN PASSMORE (NHLS/UCT)

HIV prevention and pathogenesis; HPV clinical disease and immunology, mucosal STIs.

### DR WENDY BURGERS

HIV Immunology and Pathogenesis

### DR ROS CHAPMAN

HIV Vaccines

# DR NICOLA DOUGLASS

HIV Vaccines / poxviruses

# DR GERALD CHEGE

HIV Vaccines

## DR MARVIN HSIAO (NHLS/UCT)

Clinical Virology, cytomegalovirus and molecular diagnostics

### DR. STEPHEN KORSMAN (NHLS/UCT)

Clinical Virology, Hepatitis B, molecular diagnostics and outreach

# DR ZIZIPHO MBULAWA (NHLS/UCT)

Human Papillomavirus

### DR CATHERINE RIOU

HIV Immunology and Pathogenesis

Dr Heidi SMUTS (NICD/NHLS/UCT) Hepatitis C; Novel respiratory viruses.

DR ZIYAAD VALLEY-OMAR (NICD/NHLS/UCT) Molecular Epidemiology

# **Honorary Staff**

DR ERICA ANDERSEN-NISSEN Research Associate

DR TIM TUCKER Senior Lecturer; HIV.

### **Research Staff**

MELISSA-ROSE ABRAHAMS HIV Diversity and Pathogenesis.

CRAIG ADAMS HIV Vaccines.

BRUCE ALLAN Human papillomavirus.

DESIREE BOWERS HIV Vaccines.

SHIREEN GALANT HIV Vaccines.

HOYAM GAMIELDIEN Mucosal HIV/STI infections.

JINNY MARAIS HIV Diversity and Pathogenesis.

TRACEY MULLER HIV Immunology and Pathogenesis.

NONKULULEKO NDABAMBI HIV Diversity and Pathogenesis.

CECILIA RADEMEYER HIV Diversity and Pathogenesis.

DEBBIE STEWART HIV Diversity and Pathogenesis/Project co-ordinator and GLP archivist

DANIEL SHEWARD HIV Diversity and Pathogenesis.

RUWAYHIDA THEBUS HIV Diversity and Pathogenesis.

# **Postdoctoral Fellows**

DR COLIN ANTHONY HIV Diversity and Pathogenesis

SHAMEEM JAUMDALLY Mucosal HIV/STI Infections DR TRACY MEIRING Microbiomics and Viromics

DR COBUS OLIVIER Mucosal HIV/STI Infections

DR PHILIPPE SELHORST HIV Diversity and Pathogenesis.

DR LINDI ROBERTS Mucosal HIV/STI Infections

DR ANDREIA SOARES HIV Immunology and Pathogenesis

DR NATALIE STRICKLAND HIV Immunology and Pathogenesis

# **Administrative Staff**

NYAMEKA MHLONYELWA-MONA Divisional Secretary

SUSAN LANFEAR PA to Prof Anna-Lise Williamson

KATHRYN NORMAN PA to A/Prof Jo-Ann Passmore and Dr Wendy Burgers

# **Contact Details**

Email: nyameka.mhlonyelwa-mona@uct.ac.za Postal Address: Division of Medical Virology, S3.23 Wernher Beit South Wing Building, University of Cape Town, Faculty Health Sciences, Anzio Road, 7925 Telephone: +27 21 406 6983 Fax: +27 21 406 6682

# DEPARTMENT OF CLINICAL LABORATORY SCIENCES

# **Research output**

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# DEPARTMENT OF HEALTH AND REHABILITATION Sciences

# Head of Department: Associate Professor Shajila Singh

# **Departmental Profile**

The Department of Health and Rehabilitation Sciences is a multi-professional Department, and offers undergraduate and postgraduate programmes in Audiology, Speech and Language Pathology, Occupational Therapy, and Physiotherapy. The Department also offers Postgraduate Diplomas, Master's and PhD programmes in Disability Studies and Nursing. The Department is characterised by diverse research interests. Much research is related to poverty and inequality, with a particular focus on disability and social inclusion. There is a strong engagement in research regarding health-related guality of life and the International Classification of Functioning and Disability. The Department also home to professional-specific clinical research in physiotherapy, occupational therapy, communication sciences and disorders and nursing. The Department has also developed expertise in clinical education research, to enhance student learning at undergraduate and postgraduate levels.

# **Departmental Statistics**

# Permanent and long-term contract staff

Professor	2
Associate Professor	9
Senior Lecturer	11
Lecturer	15
Clinical Educator	26
Technical and Support Staff	2
Administrative and Clerical Staff	9
Total	74

# Students

Doctoral	13
Master's	128
Postgraduate Diplomas	77
Undergraduate	704
Total	922

# **Research Fields and Staff**

# Permanent staff

# PROFESSOR S.L. AMOSUN

Non-communicable diseases; disability prevention and health promotion

# MS HELEN BUCHANAN

Evidence-based practice; hand therapy; measurement instruments; rehabilitation in physical health; clinical reasoning and reflection

# DR THERESA BURGESS

Muscle damage and endurance exercise; clinical sports physiotherapy; bioethics

# MS LIZAHN CLOETE

Foetal Alcohol Spectrum Disorders; community development & occupational therapy in primary health care

# ASSOCIATE PROFESSOR SHEILA CLOW

Midwifery; women's health care; intrapartum care; mentorship

# ASSOCIATE PROFESSOR SINEGUGU DUMA

Interplay between HIV and gender-based violence; sexual assault; and curriculum development

#### ASSOCIATE PROFESSOR EVE DUNCAN

Poverty, occupation & psychiatric disability; disability inclusion through participatory development in deep rural communities

# MS EILEEN DU PLOOY

Occupation based work practice; palliative care

# MS GILLIAN FERGUSON

HIV; paediatric motor assessment and rehabilitation

#### MS NICKI FOUCHE

Lived experiences in the care of patients in the Intensive Care Units

#### ASSOCIATE PROFESSOR ROSHAN GALVAAN

Occupation-based community development practice; occupational justice; occupational choice; youth; OT curriculum and human rights

### MS PAM GRETCHEL

Best paediatric occupational therapy practice

## DR MICHEAL HARTY

Augmentative and Alternative Communication (AAC) and family-centred intervention practices

#### MS CANDICE HENDRICKS

Rehabilitation of sports-related orthopaedic and neuromusculoskeletal conditions

# PROFESSOR JENNIFER JELSMA

Function in children with HIV/AIDS; health related quality of life; living conditions of people with disabilities; use of the ICF

# ASSOCIATE PROFESSOR HARSHA KATHARD

Communication impairment; disability and service delivery

# DR UNA KYRIACOS

Role of biosciences in clinical nursing education; ophthalmic nursing; preparation of nurse educators

## ASSOCIATE PROFESSOR THERESA LORENZO

Disability rights and equity for youth and women; community based rehabilitation

#### MS SORAYA MAART

Incontinence and sexual dysfunction amongst sexually abused persons; HIV and community empowerment

## MS SHAMILA MANIE

Intensive Care Unit management; cardio-pulmonary rehabilitation, TB

#### ASSOCIATE PROFESSOR PAT MAYERS

Mental health; support and training for primary health care providers/clinical nurse practitioners with special to HIV and ARV rollout; primary care practice teams

# MR DOUGLAS NEWMAN

LGBTI health

#### MS VIVIENNE NORMAN

Paediatric dysphagia and early intervention

#### DR MICHELLE PASCOE

Speech, language and literacy difficulties in schoolaged children

# MS LUCRETIA PETERSEN

Ototoxicity; otoacoustic emissions

#### MS ROMY PARKER

Pain in HIV

# DR LEBOGANG RAMMA

Noise and public health

# ASSOCIATE PROFESSOR ELELWANI RAMUGONDO

Promoting childhood play in context; play, learning & development outcomes for children on anti-retroviral treatment; the politics of human occupation

#### MS CHRISTINE ROGERS

Vestibular assessment and management

### ASSOCIATE PROFESSOR SHAJILA SINGH

Dysphagia; motor speech disorders; ethics; HIV/AIDS Ms Amshuda Sonday Inclusive education; profound multiple intellectual disability and quality of life

## **Clinical Educator Staff**

#### MRS FATEMAH CAMROODIEN-SURVE

Early childhood intervention; parent training

#### MRS NAILA EDRIES

Occupational health and wellness; promoting behaviour change; musculoskeletal injury management; evaluation and feedback methods to drive learning

#### MRS MADRI ENGELBRECHT

Disability and employment

#### MRS FADIA GAMIELDIEN

Health professionals' attitudes towards mental health service users; disability, diversity and social change

#### MRS FAHMIDA HARRIS

The impact of physical activity on quality of life of persons with mental illness

#### MS JANE LE ROUX

Evaluating the effectiveness of The Shine Program for literacy development in grade 2 and 3 learners

#### MR MARC NAIDOO

Clinical education models and strategies; rehabilitation in neuro patients; soccer injury prevention at school level

#### MRS ELRIETHA OLIVIER

Cochlear implants; bimodal fitting and FM use; balance disorders in cochlear implant recipients

## MRS LAURA RUSSELL

Traumatic brain injury care pathways after discharge; assessment of aphasia in South African languages

# MRS CELESTE SAMUELS

Right hemisphere communication disorders intervention and referral pathways; cerebral palsy and communication

#### MRS DES SCOTT

Group teaching in clinical practice; paediatric clinical practice

#### MRS HEATHER TALBERG

Clinical education best practice models and guidelines; developing professional and reflective practitioners

#### MS FREDA WALTERS

Fluency, community based rehabilitation; clinical education

# **Contact Details**

Postal address: Department of Health and Rehabilitation Sciences, Faculty of Health Sciences University of Cape Town, Anzio Road, Observatory, 7925 Telephone: +27 21 406 6401 Fax: +27 21 406 6323 E-mail:debra.adams@uct.ac.za Web: http://www.health.uct.ac.za/departments/shrs/ about/

# **Research Output**

# **Edited books**

Lorenzo, T., Ned, L. and Cois, A. (eds) 2013. Disability Catalyst Africa: Youth, Disability and Rural Communities. Facing the Challenges of Change. Series Number 3. 96pp. Cape Town: Disability Innovations Africa. ISBN 9780987020321.

#### Chapters in books

McKenzie, J. 2013. Including students with intellectual disability in higher education: implications for curriculum. In C. Ohajunwa and J. McKenzie (eds), Disability Catalyst Africa - Series No. 4: Beyond "if" to "how": Disability Inclusion in Higher Education, pp. 24-35. Cape Town: Disability Innovations Africa. ISBN 9780987020938.

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## Articles in peer-reviewed journals

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Amosun, S.L., Nyante, G.G.N. and Wiredu, E.K.W. 2013. Perceived and experienced restrictions in participation and autonomy among adult survivors of stroke in Ghana. African Health Sciences, 13(1): 24-31.

Amosun, S.L., Kambalametore, S.M., Maart, S. and Ferguson, G. 2013. Undergraduate physiotherapy education in Malawi - the views of students on disability. Malawi Medical Journal, 25(2): 40-44.

Clenzos, N., Naidoo, N. and Parker, R. 2013. Physiotherapists' knowledge of pain: a cross-sectional correlation study of members of the South African sports and orthopaedic manipulative special interest groups. South African Journal of Sport Medicine, 25(4): 95-100.

Cobbing, S.C., Chetty, V.C., Hanass-Hancock, J.H., Jelsma, J.M., Myezwa, H.M. and Nixon, S. 2013. Position paper: the essential role of physiotherapists in providing rehabilitation services to people living with HIV in South Africa. South African Journal of Physiotherapy, 69(1): 22-25.

Cramm, J.M.C., Nieboer, A.P., Finkenflugel, H. and Lorenzo, T. 2013. Comparison of barriers to employment among youth with and without disabilities in South Africa. WORK-A Journal of Prevention Assessment & Rehabilitation, 46: 19-24.

Cramm, J.M.C., Nieboer, A.P., Finkenflugel, H. and Lorenzo, T. 2013. Disabled youth in South Africa: barriers to education. International Journal on Disability and Human Development, 12(1): 31-35.

Fagan, J.J., Lentin, R. and Quail, G.S. 2013. International practice of laryngectomy rehabilitation interventions: a perspective from South Africa. Current Opinion in Otolaryngology & Head and Neck Surgery, 21: 199-204.

Ferguson, G., Jelsma, D.J., Jelsma, J.M. and Engelsman, B.C.M.E. 2013. The efficacy of two task-orientated interventions for children with developmental coordination disorder: neuromotor task training Wii Fit training. Research in Developmental Disabilities, 34: 2449-2461.

Gonasillan, A., Bornman, J. and Harty, M. 2013. Vocabulary used by ethno-linguistically diverse South African toddlers: a parent report using the language development survey. South African Journal of Communication Disorders, 60: 10-15.

Hendricks, C. and Phillips, J. 2013. Prevalence and incidence rate of injuries in runners at a local athletic club in Cape Town. South African Journal of Physiotherapy, 69(3): 1-5.

Hendricks, S. and Sarembock, M. 2013. Attitudes and behaviours of top-level junior rugby union coaches towards the coaching of proper contact technique in the tackle - a pilot study. South African Journal of Sport Medicine, 25(1): 8-11.

Isaacs Dollie, W., Duma, S.E. and Mayers, P.M. 2013. Registered nurses' role in diagnosing childhood tuberculosis in South Africa. African Journal of Nursing and Midwifery, 15(1): 42-53.

Jelsma, J.M., Pronk, M.P., Ferguson, G. and Jelsma-Smit, D. 2013. The effect of Nintendo Wii Fit on balance control and gross motor function of children with spastic hemiplegic cerebral palsy. Developmental Neurorehabilitation, 16(1): 27-37.

Edries, N.E., Jelsma, J.M. and Maart, S. 2013. The impact of an employee wellness programme in clothing/ textile manufacturing companies: a randomised controlled trial. BMC Public Health, 13: 25(9pp). DOI: 10.1186/1471-2458-13-25.

Kathard, H. and Pillay, M. 2013. Promoting change through political consciousness: a South African speechlanguage pathology response to the world report on disability. International Journal of Speech-Language Pathology, 15(1): 84-89.

Lang, T., Parker, R. and Burgess, T. 2013. Cervicomandibular muscle activity in females with chronic cervical pain. South African Journal of Physiotherapy, 69(3): 1-6.

Mathews, S., Abrahams, N. and Jewkes, R. 2013. Exploring mental health adjustment of children post sexual assault in South Africa. Journal of Child Sexual Abuse, 22(6): 639-657.

McKenzie, J., McConkey, R. and Adnams, C.M. 2013. Health conditions and support needs of persons living in residential facilities for adults with intellectual disability in Western Cape Province. SAMJ South African Medical Journal, 103(7): 481-484.

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McKenzie, J. 2013. Models of intellectual disability: towards a perspective of (poss)ability. Journal of Intellectual Disability Research, 57(4): 370-379.

Pascoe, M., Rogers, C. and Norman, V.R. 2013. Are we there yet? On a journey towards more contextually relevant resources in speech-language therapy and audiology. South African Journal of Communication Disorders, 60(1): 2-9.

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Ramma, L. and ibekwe, T.I. 2012. Efficacy of utilising patient self-report of auditory complaints to monitor aminoglycoside ototoxicity. International Journal of tuberculosis and lung disease, 5(3): 1-5.

Spiro, M., Becker, L. and Beech, T. 2013. Small and large groups as containers for transformation in a group analytic training programme: Cape Town, South Africa. Group Analysis: The Journal of Group Analytic Psychotherapy, 46(3): 286-298.

Taljaard, D.L., Leishman, N.F. and Eikelboom, R. 2013. Personal listening devices and the prevention of noise induced hearing loss in children: the cheers for ears pilot program. Noise & Health, 15(65): 261-268.

Unger, M., Jelsma, J.M. and Stark, C.S. 2013. Effect of a trunk-targeted intervention using vibration on posture and gait in children with spastic type cerebral palsy: a randomised control trial. Developmental Neurorehabilitation, 16(2): 79-88.

# Peer-reviewed published conference proceedings

Jelsma, J.M. and Maart, S. 2013. What additional domains if any, would increase the explanatory power of the EQ-5D? In J. Busschbach (ed), Proceedings of 29th Scientific Plenary Meeting of the EuroQol Group, 13-15 September 2012, The Netherlands. The Netherlands: EuroQol Group Executive Office. ISBN 9789081442558.

Kyriacos, U. 2013. Standardising early warning vital signs monitoring and reporting in South Africa. Proceedings of Annual Nursing Education Conference, 2-4 September 2013, Gauteng. Pretoria: Fundisa. ISBN 9780620571098.

# DEPARTMENT OF Human Biology

# Head of Department: Professor Lauriston Kellaway

# **Departmental Profile**

The Department of Human Biology (HUB) includes Anatomy; Biokinetics; Biological Anthropology; Biomedical Engineering and Medical Imaging; Cell Biology; Exercise Science; Healthcare Technology Management; Human Nutrition and Dietetics; Neurosciences; Physiology and Sport and Exercise Medicine.

The Division of Anatomy sent Professor Graham Louw and Dr Geney Gunston as delegates to the Anatomical Association of Southern Africa conference in Durban in April, and students and staff were also part of the 17<sup>th</sup> Reach to Recovery International Breast Cancer Support Conference and the UCT Human Biology and Clinical Laboratory Sciences Research Day. MSc student Kyle Paulssen won best post presentation at the Research Day. Devin Finaughty and Carrie Clarke attended the International Association for Craniofacial Identification in Kruger Park in August. Two MSc students (Rip da Silva and Kerri v.d.Berg) graduated in 2013. Professor Morris completed the second half of his Fulbright Visiting Scholarship at the Ohio State University in June but attended the American Association of Physical Anthropology meetings in Knoxville before his return. His recently published book 'Missing and Murdered' was awarded the 2013 WW Howells Brook Prize by the American Association of Anthropologists and he returned to the USA in November to attend the award ceremony in Chicago.

Postgraduate students and faculty of the Division of Biomedical Engineering attended and presented papers the Annual Scientific Meeting and Exhibition of the International Society for Magnetic Resonance in Medicine (ISMRM) in Salt Lake City, the Annual Meeting of the Organization for Human Brain Mapping (OHBM) in Seattle, and at the 1st ASME/FDA Frontiers in Medical Devices conference in Washington, all in the United States. Another BME PhD student attended the 2nd Cardiff International Symposium on Magnetic Resonance Spectroscopy in September 2013. Dr Sivarasu was presented with 'Young scientist award' for best oral presentation during the 18th International Leprosy congress held at Brussels, Belgium, September 2013. Dr Sivarasu's research was also highlighted on the ANN7 TV channel in an interview and was featured in the BBC Health Check programme aired in May 2013. Mladen Poluta has been involved in a number of key initiatives (global, regional, national and local) focusing on innovation of medical devices and in-vitro diagnostics as well as contributing to the work of the CSIR Infrastructure Unit Support System (IUSS) project developing norms and standards for healthcare delivery in South Africa.

The Division of Physiology had a particular active year for conferences and sent both staff and student delegates to the Neurological Association of South Africa in Stellenbosch in March, the Society for Neuroscientists of Africa in Rabat Morocco in June, the Biological Psychiatry conference in Kwa-Zulu Natal in August, and the Society for Neuroscience in San Diego USA in November. Jacqueline Dimetalis was an invited speaker at the Morocco conference.

Cell Biologist Professor Sharon Prince was invited to present talks at the Federal University of Ceará inFortaleza and at the Biomedical Sciences Institute in Rio de Janeiro in Brazil. Reyna Deeya Ballim represented South Africa at the 5<sup>th</sup> HOPE meeting in Tokyo Japan where she was awarded first prize for her poster presentation. Several staff and students attended local conferences of the Physiological Society of Southern Africa, the South African Society for Human Genetics and the Neurology Association of South Africa, and the UCT Clinical Laboratory Science and Human Biology postgraduate Research Day. Britta Kleemann won 2<sup>nd</sup> prize for her presentation in the Physiological Society and Lauren Watson and Danielle Smith received prizes for the oral and poster presentations at the Neurology Association. Lester Davids was selected as a group member to launch the inaugural African Cancer Leader's Institute and Professor Kidson together with Professor Greenberg of Genetics created a website as part of the Stem Cell Initiative. Lester Davids' student Shelley Ma was awarded a prestigious Fulbright Student Fellowship which she will take up in Washington in 2014. Dirk Lang was guest lecturer in the Honours programme at Rhodes University and the Confocal & Light Microscope Facility in HUB hosted a highly successful workshop as part of the 8<sup>th</sup> meeting of the International Proteolysis Society. Natasha Hardcastle was sponsored by Zeiss(SA) to present at the Microscopy Society meeting at Wits University.

The UCT/MRC Research Unit for Exercise Science and Sports Medicine is based at the Sports Science Institute of South Africa (SSISA). Because Prof Noakes will be retiring at the end of 2014, Prof Vicki Lambert was appointed as Acting Director in 2013. The Unit has four main research areas, namely, Health and well-being; Exercise in the management of chronic disease; Injuries and medical conditions associated with sport and exercise; and Exercise performance. During 2013, funding for research projects was received from UCT, MRC, NRF, Training Human Resources Industry Programme (THRIP), Discovery Health and other industry partners. Within the academic staff, there are 14 NRFrated staff. Prof Noakes has the highest rating, namely, A1. A total of 59 research articles were published by staff and students in various relevant ISI-rated journals during 2013, and 25 students graduated during 2013 (10 Honours students, 6 MSc students, 7 PhD students, 1 MPhil (Biokinetics) and 1 MPhil (Sport and Exercise Medicine). Several staff and students were recipients of awards during 2013. Of the staff, Prof Noakes was one of the City Press' 100 World Class South Africans, under the category of Changemakers and crusaders. Dr Julia Goedecke received the Society for Endocrionology and Diabetes in South Africa (SEMDSA) Endocrinology award for the best original research paper published in 2013. Of the postdoctoral students, Dr Jordan Santos Concejero was awarded the Young Investigator Award travel grant by the European College of Sports Science to attend the European Conference of Sports Science in Barcelona, Spain. One of our MSc students, Ms Shameemah Abrahams was awarded the prestigious Master's DST Fellowship Women in Science Award 2013. Finally, Prof Mike Lambert launched the Athlete Monitoring and Assessment Software (AMAS) which will be very useful in SSISA's High Performance Centre.

The Division of Nutrition and Dietetics staff was consulted regularly on various nutrition issues by the public, lay media, communities, clinical colleagues as well as industry. Dr J Harbron was appointed by the National Department of Health: Nutrition Directorate to facilitate the development of the "Responsive feeding" guideline of the new paediatric Food Based Dietary Guidelines. This culminated in a publication in the SA Journal of Clinical Nutrition with Dr Harbron being primary author and three other division staff, Sharmilah Booley, Baheya Najaar and Cath Day being the co-authors. Assoc/Prof Senekal continues to serve as expert nutrition research, media liaison and project advisor to the Discovery Vitality team.

# **Departmental Statistics**

# Permanent and long-term contract staff

Professors (1 Discovery)	13
Associate Professors (1 MRC)	6
Senior Lecturers (1 MRC)	15
Lecturers (including part-time)	19
Postdoctoral and Research Staff	32
Technical and Support Staff	24
Admin and Clerical Staff	15
Total	124

# Students

Doctoral	51
Master's	113
M Phil	28
Honours	52
PG Diploma	16
Undergraduate	1589
Total	1849

# **Research Fields and Staff**

# PROFESSOR LAURISTON KELLAWAY

Head of Department; Models of neuroinflammation, stress and brain function, in vivo and in vitro visual cortical mechanisms

# PROFESSOR MALCOLM COLLINS

RUESSM: Chief Specialist Scientist, MRC; Biochemistry; Molecular biology; Genetics – applied to performance and injuries

# PROFESSOR WAYNE DERMAN

RUESSM: Sport and Exercise Medicine Co-director, Clinical Sport and Exercise Medicine Research Group, Co-Convenor: MPhil (Sport and Exercise Medicine). Skeletal muscle dysfunction in chronic disease; exercise training in chronic disease

#### PROFESSOR TANIA DOUGLAS

Director of the MRC/UCT Medical Imaging Research Unit (MIRU); biomedical engineering, image processing

#### PROFESSOR SUE KIDSON

Developmental biology; melanocytes and hypopigmentary disorders; eye development and glaucoma

#### PROFESSOR MIKE LAMBERT

RUESSM: Exercise training and recovery; Science applied to rugby, Coordinator of the Ex Sci Hons Course

# PROFESSOR ESTELLE V. LAMBERT

RUESSM: Physical activity epidemiology and chronic diseases of lifestyle; obesity and chronic disease

#### PROFESSOR GRAHAM J. LOUW

Human growth; medical education; skeletal analysis

#### PROFESSOR ALAN G. MORRIS

Human evolution; forensic anthropology, skeletal biology of early peoples in southern Africa; history of physical anthropology

#### PROFESSOR TIMOTHY D. NOAKES

Discovery Health Chair of Exercise and Sports Science and Director of UCT/MRC Research and Exercise

Medicine Research Unit RUESSM: Regulation of exercise performance; sports medicine

# PROFESSOR VIVIENNE RUSSELL

Neurophysiology: Development, stress, exercise and vulnerability to neuronal injury; Attention deficit hyperactivity disorder; Depression

#### PROFESSOR MARTIN P. SCHWELLNUS

RUESSM: Sport and Exercise Medicine, Convenor of the MPhil (Sport and Exercise Medicine) programme

# ASSOCIATE PROFESSOR ANDREW BOSCH

RUESSM: Fuel substrate metabolism, exercise training

## ASSOCIATE PROFESSOR DIRK M. LANG

Nervous system development; axon growth and regeneration

ASSOCIATE PROFESSOR ERNESTA MEINTJES

MIRU: NRF chair; magnetic resonance imaging

# ASSOCIATE PROFESSOR EDWARD OJUKA

RUESSM: glucose disposal in muscle

#### ASSOCIATE PROFESSOR SHARON PRINCE

The cell and molecular biology of cancer and the identification of novel targets for anti-cancer drugs, with special focus on the T-box transcription factors Tbx2 and Tbx3.

# ASSOCIATE PROFESSOR MARJANNE SENEKAL

Head: Division of Human Nutrition, Weight management and health interventions, dietary assessment, nutritional genomics

#### DR COLIN ANDREW

MIRU: Senior Lecturer (part-time); Biomedical signal processing

## MS ELMI BADENHORST

Lecturer; medical education, under-preparedness and academic performance

#### MS SHARMILAH BOOLEY

Lecturer; Division of Human Nutrition; Nutrition, HIV/ AIDS and quality of life; nutrition related behaviour change interventions for prevention and management of chronic diseases of lifestyle (school and work-place based)

## DR KISHOR BUGARITH

Senior Lecturer; physiology, neurobiology of stress, neurobiology of food intake

#### MS DINAH CURLING

Lecturer (part-time) Division of Human Nutrition

#### DR LESTER M. DAVIDS

Senior Lecturer; redox and antioxidant biology; skin cancer, pigmentary disorders of the skin, vitiligo, hair follicle biology

#### MS ZARINA EBRAHIM

Clinical Educator (part-time); Division of Human Nutrition

#### DR JACQUI FRIEDLING

Lecturer; skeletal biology; physical anthropology, forensic anthropology

## DR JULIA H. GOEDECKE

RUESSM: Specialist Scientist, MRC; Obesity in relation to disease risk; Exercise metabolism and sports nutrition

# DR GENEY GUNSTON

Senior Lecturer; gross anatomy; clinical anatomy; medical education

#### DR ASFREE GWANYANYA

Senior Lecturer; cardiac pathophysiology, hypertrophy, ion channels

#### DR JANETTA HARBRON

Senior Lecturer; Division of Human Nutrition; Obesity and other CDL intervention, Nutritional genomics; Sports nutrition.

#### MS FIONA HERRMANN

Clinical Educator (part-time); Division of Human Nutrition, risks for obesity development in SA communities, nutrition in palliative oncology Dr Lauren Hill

Lecturer; Division of Human Nutrition, clinical dietetics; critical care, nutrition in surgical gastroenterology, gastrointestinal dysfunction, parenteral and enteral nutrition, oxidative stress and antioxidants

#### MS FATIMA HOOSEN

Clinical Educator (part-time); Division of Human Nutrition

#### DR MARCIN JANKIEWICZ

MIRU: Lecturer. Cape Universities Brain Imaging Centre: Magnetic Resonance Imaging

#### DR LESTER JOHN

MIRU: Senior Lecturer and Software Specialist; Electromyography, Electroencephalography, Brain-Computer Interfacing, Medical Electronics & Devices

#### DR TRACY KOLBE-ALEXANDER

RUESSM: Senior Lecturer, Physical activity and health; Co-ordinator of the BSc (Hons) Biokinetics and MPhil (Biokinetics) courses

#### MS BAHEYA NAJAAR

Lecturer, Division of Human Nutrition, community nutrition, infant and young child feeding

#### MR MLADEN POLUTA

Senior Lecturer; Director: Healthcare Technology Management

#### DR DELVA SHAMLEY

Senior Lecturer; upper limb morbidity in breast cancer, molecular effects of adjuvant therapies in cancer

# DR CHARLES P. SLATER

Senior Lecturer; anatomy, medical education

#### MR STEF STEINER

Lecturer; biomechanics

#### DR SUDESH SIVARASU

Lecturer, biomechanics, biomechatronics, medical devices & rehabilitation engineering

#### DR LIZ VAN DER MERWE

Senior Lecturer; ocular development and regeneration, vascular biology, pancreatic islet regeneration, 3-D microscopic image reconstruction.

#### DR WILLEM VAN DER MERWE

RUESSM: Senior honorary lecturer: Sports orthopaedic research

#### DR CHRISTOPHER WARTON

Senior Lecturer; medical education, teaching materials, MRI analysis and cerebellar structure

# Postdoctoral Fellows/Scientific and Research Officers, Research Associates

#### DR AMAAL ABRAHAMS

Cell Biology: Research Officer. Role and regulation of the T-box transcription factor TBX3 during the cell cycle

#### DR YUMNA ALBERTUS-KAJEE

RUESSM: Research Officer. Electromyography in the prevention of chronic disease in patients, and neuromuscular adaptations to exercise in athletes, commercial research.

#### DR ALI ALHAMUD

MIRU: Postdoctoral Fellow; magnetic resonance imaging

#### DR REYNA DEEYA BALLIM

Cell Biology: Postdoctoral Fellow. The identification of target genes of the transcription factor TBX2 which mediate its pro-proliferative activities in cancer and the elucidation of its crystal structure with a view to designing drugs that inhibit TBX2's oncogenic function

# DR ROBEA BALLO

Cell Biology and genetics: Genetics of vitiligo.

#### DR IAN BURGER

MIRU: Postdoctoral Fellow; magnetic resonance imaging

#### MS SUSAN COOPER

Microscopy Unit: Technical Officer

#### DR KYLIE DE JAGER

MIRU: Postdoctoral Fellow; automated microscopy; medical devices

# DR JACQUELINE DIMATELIS

Physiology: Postdoctoral Fellow. Neurophysiology: Development, stress, exercise and vulnerability to neuronal injury; Attention deficit hyperactivity disorder; Depression

#### DR CATHERINE DRAPER

RUESSM: Senior Research Officer. Social science aspects of physical activity as a means of health promotion and disease prevention. Development and evaluation of promotion programmes. Physical activity in early childhood.

#### DR JANINE GRAY

RUESSM: Honorary lecturer. Cricket research – research coordinator for Cricket South Africa

#### DR MARTHA HOLMES

MIRU: Postdoctoral Fellow, neuroimaging

#### MR DAVID KARPUL

RUESSM: Research Officer: Biomechanics research, Manager of the Biomechanics Lab., electronics

#### DR DHESHNIE KESWELL

RUESSM: Postdoctoral Fellow: Molecular and cellular aspects of obesity and type 2 diabetes

#### DR TERTIUS KOHN

RUESSM: Senior Research Officer. Skeletal muscle biochemistry of exercise adaptation, muscle fatigue and weakness

#### MR SRIRAM KRISHNAN

Development of a light microscope for automated identification of TB bacilli in ZN stained sputum smears

#### DR JACOLENE KROFF

RUESSM: Senior Research Officer: Manages, runs and supervises all research conducted in the Metabolic Lab.

#### DR WENDY KRÖGER

Postdoctoral fellow in cell biology: The molecular mechanisms by which the T-box transcription factor TBX3 contributes to tumourigenesis.

#### DR AMOD KULKARNI

Postdoctoral Fellow (Claude Leon Foundation). In vitro and in vivo neuro-pharmacokinetics and neuropharmacodynamics of natural neuroprotective agents.

#### DR ROBERT LAMBERTS

RUESSM: Senior Research Officer (UCT)/Head of Orthopaedic Research (SUN), Predicting and monitoring performance, Thermoregulation, Biomechanics, Orthopaedics Cerebral Palsy and HIV

# DR BARAK MORGAN

MIRU: Behavioural, physiological and neuroimaging studies in affective neuroscience

## DR LISA MICKLESFIELD

RUESSM: Senior Researcher/Honorary Research Fellow (Wits University). Bone health and physical activity

Ms Mweete Nglazi RUESSM: Research Officer. Epidemiology and biostatistics

# DR MICHAEL POSTHUMUS

RUESSM: Senior Research Officer. Genetics – applied to performance and injuries, Sports orthopaedic research

# DR DALE RAE

RUESSM: Senior Research Officer: Circadian rhythms and performance; Commercial research division manager

#### DR LAURIE RAUCH

RUESSM: Research Officer: Brain activity and cognitive stress

#### DR FRANCES ROBERSTON

MIRU: Postdoctoral Fellow; magnetic resonance imaging

## DR ELSKE SCHABORT

RUESSM: Research Officer: Brain regulation of exercise; Commercial research

#### DR JORDAN SANTOS CONCEJERO

RUESSM: Postdoctoral Fellow: Exercise physiology; Brain oxygenation during exercise

#### DR ALISON V. SEPTEMBER

RUESSM: Senior Research Officer. Molecular human genetics

#### DR JAMES SMITH

RUESSM: Research Officer: Diet, health, metabolism and exercise performance

### DR JEROEN SWART

RUESSM: Honorary Research Associate. Sports medicine

# DR ROSS TUCKER

RUESSM: Senior Research Officer: Central Governor research, Exercise training; Commercial Research division co-management

#### MRS HENDRIENA VICTOR

RUESSM: Senior Scientific Officer: HPLC analysis, Laboratory support

## **Contact Details**

Postal Address: Department of Human Biology, Health Sciences Faculty, Observatory, 7925, South Africa Telephone: +27 21 406 6235 Fax: + 27 21 448 7226 Email:malcolm.collins@uct.ac.za Web: http://www.uct. ac.za/departments/humanbio/

# **Research output**

## Articles in peer-reviewed journals

Abrahams, Y., Laguette, M.J., Prince, S. and Collins, M. 2013. Polymorphisms within the COL5A1 3'-UTR that alters mRNA structure and the MIR608 gene are associated with achilles tendinopathy. Annals of Human Genetics, 77: 204-214.

Aliwaini, S., Swarts, A.J., Blanckenberg, A., Mapolie, S.F. and Prince, S. 2013. A novel binuclear palladacycle complex inhibits melanoma growth in vitro and in vivo through apoptosis and autophagy. Biochemical Pharmacology, 86: 1650-1663.

An, R., Patel, D., Segal, D. and Sturm, R. 2013. Eating better for less: a national discount program for healthy food purchases in South Africa. American Journal of Health Behavior, 37(1): 56-61.

Badenhorst, E.S. and Kapp, R. 2013. Negotiation of learning and identity among first-year medical students. Teaching in Higher Education, 18(5): 465-476.

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Boonzaier, J., Van der Merwe, E.L., Bennett, N. and Kotze, S.H. 2013. A comparative histochemical study of the distribution of mucins in the gastrointestinal tracts of three insectivorous mammals. Acta Histochemica, 115(6): 549-556.

Boonzaier, J., Van der Merwe, E.L., Bennett, N. and Kotze, S.H. 2013. Comparative gastrointestinal morphology of three small mammalian insectivores: Acomys spinosissimus (Rodentia), Crocidura cyanea (Eulipotyphla), and Amblysomus hottentotus (Afrosoricida). Journal of Morphology, 274: 615-626.

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Derman, E.W., Schwellnus, M.P., Jordaan, E., Blauwet, C.A., Emery, C., Pit-Grosheide, P., Martinez-Ferrer, J.O., Stomphorst, J., Van de Vliet, P., Webborn, N. and

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Gabriels, G.A. and Lambert, M.I. 2013. Nutritional supplement products: does the label information influence purchasing decisions for the physically active? Nutrition Journal, 12: 133(8pp). DOI: 10.1186/1475-2891-12-133.

Genade, T. and Lang, D.M. 2013. Resveratrol extends lifespan and preserves glia but not neurons of the Nothobranchius guentheri optic tectum. Experimental Gerontology, 48(2): 202-212.

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Hay, M., Patricios, J., Collins, R., Branfield, A., Cook, J., Handley, C.J., September, A.V., Posthumus, M. and Collins, M. 2013. Association of type XI collagen genes with chronic Achilles tendinopathy in independent populations from South Africa and Australia. British Journal of Sports Medicine, 47: 569-574.

Hayes, P., Adams, K., Dave, J.A. and Goedecke, J.H. 2013. Ethnic-specific associations between abdominal and gluteal fat distribution and the metabolic complications of obesity: implications for the use of liposuction. Plastic Surgery: An International Journal, 2013: 796359(14pp). DOI: 10.5171/2013.796359.

Hendricks, S. and Sarembock, M. 2013. Attitudes and behaviours of top-level junior rugby union coaches towards the coaching of proper contact technique in the tackle - a pilot study. South African Journal of Sport Medicine, 25(1): 8-11.

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Howells, F.M., Ives-Deliperi, V.L., Horn, N. and Stein, D.J. 2013. Increased thalamic phospholipid concentration evident in bipolar I disorder. Progress in Neuro-Psychopharmacology & Biological Psychiatry, 41: 1-5.

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nutrition and physical activity programme for grade 4 learners in the Western Cape province. South African Family Practice, 55(4): 391-397.

Joffe, Y., Collins, M. and Goedecke, J.H. 2013. The relationship between dietary fatty acids and inflammatory genes on the obese phenotype and serum lipids. Nutrients, 5: 1672-1705.

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Khumalo, N., Mkentane, K.M., Muthukarapan, C., Hardie, D.R., Korsman, S.N.J., Hu, N., Mthebe, T., Davids, L.M. and Rousseau, J. 2013. Invisible bleeding from clean-shave haircuts: detection with blood specific RNA markers. Dermatology, 227: 197-201.

Killeen, P., Russell, V.A. and Sergeant, J.A. 2013. A behavioral neuroenergetics theory of ADHD. Neuroscience and Biobehavioral Reviews, 37(4): 625-657.

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# DEPARTMENT OF Medicine

# Head of Department: Professor B.M. Mayosi

# **Departmental Profile**

The Department of Medicine is a large clinical department which plays a leading role in medical education and research, and provides clinical services to the communities of the Western Cape and, in the case of our highly specialised services, to patients throughout southern Africa. The Department consists of 21 clinical and service divisions, 11 major research units, and four affiliated departments of medicine at GF Jooste, New Somerset, II Military, and Victoria hospitals (www.medicine.uct.ac.za). Each day, members of the department treat an average of 2,000 patients in our clinics, admit about 100 patients to our hospital services and perform over 210 medical procedures. The department offers a number of highly specialised services that are unique nationally such as allergology, bone marrow, heart, kidney, and liver transplantation, cardiac electrophysiology, endobronchial ultrasound guided bronchoscopy, and double balloon enteroscopy for visualisation of the small bowel.

There approximately 80 registrars who are training in the department, 20 of whom are from other countries such as Botswana, Ghana, Kenya, Libya, Malawi, Namibia, Swaziland, Tanzania, Uganda, Zambia, and Zimbabwe. The department produces formularies and guidelines that are used in most health facilities in South Africa, such as the *South African Medical Formulary* and *Primary Care 101*.

# **Departmental Statistics**

# Permanent and Long-term Contract Staff

Professors	10
Associate Professors	7
Senior Lecturers/ Lecturers Full-time	27
Administrative and clerical staff	100
Total	144

# **Honorary Staff**

Honorary Professors	15
Emeritus Professors	11
Honorary Associate Professors	3
Honorary Senior Lecturers	42
Honorary Research Associates	11
Total	82

# Students

Doctoral	51
Master's	13
Undergraduates	1015
Total	1079

# **Research Fields and Staff**

See Divisions and Research Units within the Department

# **Contact Details**

Postal Address: Department of Medicine, Faculty of Health Sciences University of Cape Town, Observatory 7925, Cape Town Telephone: +27 21 406 6200 Fax: +27 21 448 6815 E-mail: lorraine.wakefield@uct.ac.za

# **DIVISION OF CLINICAL IMMUNOLOGY**

# Head of Division: Associate Professor S.R. Ress

# **Divisional Profile**

The Division of Clinical Immunology undertakes a multi-disciplinary activity that includes teaching of undergraduate and post-graduate students, a clinical service involving evaluation of immune function in patients with suspected immune deficiency, and a translational research programme focussed on immunology of autoimmunity, HIV and TB.

Undergraduate teaching involves lectures in immunology to semester 3-5, 4th year, & 6<sup>th</sup> year medical student. Postgraduate teaching includes registrar teaching, 4 and 5 pm faculty of health science talks, and journal clubs. Research projects include immune pathogenesis of TB & autoimmunity.

Service delivery comprises in-and out-patient consultations. These entail an assessment of immune status in patients with suspected immune deficiency and autoimmune disorders. Research and Development (R&D) translational research involves the application of basic science advances and their implementation in innovative, clinically applicable diagnostic assays and assays for monitoring of disease activity. In the past clinical assessments were directly linked to specialized immune functional assays required for the comprehensive evaluation of immune status, performed by this unit. Several of these tests were discontinued with the formation of the NHLS who have been unable to offer all the required specialised, tertiary, complex immune assays which are labour intensive (unlike high throughput, routine assays which is their main focus). The interest, expertise and necessary facilities to undertake this function are all available in the department of medicine. There is an urgent need to re-establish essential, specialized tertiary tests that are required both for optimal care of patients, and for the maintenance of the required academic standard of a world class institute.

# **Divisional Statistics**

# Permanent and Long-term Contract Staff

Associate Professors	1
Technical Support Staff	1
Total	2

# **Research Fields and Staff**

# ASSOCIATE PROFESSOR STANLEY RESS

Immunology of tuberculosis; Autoimmunity

# **Contact Details**

Postal Address: Clinical Immunology Laboratory, H47 Old Main Building, Groote Schuur Hospital, Observatory 7925 Telephone: +27 21 406 6201 Fax: +27 21 448 6815 E-mail: stan.ress@uct.ac.za

# DIVISION OF CLINICAL Pharmacology

# Head of Division: Professor Gary Maartens

# **Divisional Profile**

The major research thrusts of the division are focused on drugs for malaria, tuberculosis and HIV. The research in these fields is broad and encompasses drug discovery, pharmacokinetics, pharmacodynamics, pharmacogenomics, clinical trials, adverse drug reactions, and pharmacoeconomic evaluation. The analytical laboratory plays a key research role with small animal models for drug discovery and in patient samples for drug concentrations. A large multicentre malaria clinical research group headed by Prof Karen Barnes is at the forefront of translational malaria research in Africa. The analytical laboratory has recently been awarded funding from NIH as an International Pharmacology Specialty Laboratory. Prof Helen McIlleron heads our clinical pharmacokinetic group, which conducts a series of studies evaluating pharmacokineticpharmacodynamic relationships of anti-tuberculosis drugs, antiretroviral drugs, and the interaction between them in adults and children with funding. We have a pharmacometric laboratory headed by Dr Paolo Denti to perform these complex analyses. Professor Gary Maartens runs a broad research programme focused on the clinical pharmacology of HIV and tuberculosis.

# **Divisional Statistics**

# Permanent and long term contract staff

Professors	2
Associate Professors	2
Senior Lecturer	2
Senior Research Officer	3
Medical Research Officer	2
Registrars	4
Research Fellow	1
Technical Support	14
Database Manager	2
Quality Assurance Manager	1
Information Pharmacist	5
Editor SAMF	1
Clinical Trial Monitors	1
Administrative and Clerical Staff	7
Departmental Assistance	1
TOTAL	47

# Honorary staff

Honorary professor	2
Honorary Lecturers	1
Honorary Research Associates	1
Total	4

# Postgraduate students

Postdoctoral research fellows	3
Doctoral	11
Master's	4
Honours	5
Total	23

# **Research Fields and Staff**

## BARNES, KI.

Malaria: antimalarial therapy – drug development (including Phase 1 and First-in-human studies), operational and policy research. Antimicrobial pharmacokinetic studies to inform optimal dosing in vulnerable populations

# BLOCKMAN, M.

Rational and cost-effective prescribing of medicines; drug utilisation review; adverse drug reaction monitoring; drug policy and regulation; human research ethics.

# COHEN, K.

Antiretroviral pharmacokinetics, adverse drug reactions, and effectiveness; HIV and non-communicable diseases; anti-tuberculosis drug-induced liver injury.

# DENTI, P

Pharmacokinetic modelling of pharmacokinetics and pharmacodynamics of antiretrovirals, anti-tuberculosis, and anti-malarials.

# GABRIELS, G.

Nutritional and traditional supplements product content validity, contamination and adulteration; drugs in sport.

## MAARTENS, G.

Adherence-resistance relationships in antiretroviral therapy; treatment algorithms for HIV-associated tuberculosis; tuberculosis preventive therapy for people living with HIV; pharmacoeconomic evaluation of antiretroviral therapy; pharmacogenomics and adverse drug reactions of antiretrovirals; HIV and non-communicable diseases.

#### MCILLERON, H.

Pharmacokinetic-pharmacodynamic relationships of anti-tuberculosis and antiretroviral drugs; pharmacogenomics; population pharmacokinetics; drug interactions between antiretrovirals and antituberculosis drugs.

#### SMITH, PJ.

Pharmacokinetics of anti-tuberculosis and antiretroviral drugs; in vitro antimalarial assays, toxicology, drug development

#### WIESNER, L.

Pharmacokinetics and Pharmacodynamics of new antimalarial and anti-TB compounds in small animal models. Bioanalytics of clinical pharmacokinetic studies

# **Contact Details**

Postal Address: Division of Clinical Pharmacology, University of Cape Town, K45, Old Main Building, Groote Schuur Hospital, Observatory, 7925 Telephone: (021) 406 6286 Fax: (021) 448 1989 Email: gary.maartens@uct.ac.za

# DIVISION OF ENDOCRINOLOGY AND DIABETIC MEDICINE

# Head of Division: Professor N.S. Levitt

# **Divisional Profile**

The Division provides an inpatient and outpatient clinical service and sub-speciality training in adult endocrinology and diabetes. It has close clinical links with Paediatric Endocrinology and Diabetes, Reproductive Endocrinology and Chemical pathology.

# Research

The Division is involved in a wide range of research activities, interacts with a number of international and local collaborators and is a member of the recently established Chronic Disease Initiative for Africa. The primary areas of research are:

- Metabolic consequences of antiretroviral therapy in HIV+ patients and: A number of cross-sectional and longitudinal studies examine the metabolic consequences of HAART are still in progress. These have been funded by the World Diabetes Foundation and Department of Health.
- Burden of disease: The contribution of diabetes and other chronic diseases to the overall burden of disease pattern in the South African context is been studied in collaboration with Dr Debbie Bradshaw, BOD Group, MRC and Professor Karen Hofman from the University of Witwatersrand.
- Phenotype of patients presenting with diabetic ketoacidosis in Cape Town. This study aim to describe the phenotype and type of diabetes in people presenting with diabetic ketoacidosis in Cape Town ; to develop standardized strategies for the safe withdrawal of insulin and prediction models to aid in identifying patients that may not require lifelong insulin.
- Understanding the epidemiology and health system impact of the overlap between infectious and non-communicable diseases in low- and middle-income countries. These studies are being undertaken in collaboration with the Institute of Infectious Diseases and Molecular Medicine, School of Public Health and Family Medicine, and other international members of a Worldwide University Network grant.

- *Obesity*: In collaboration with the Department of Human Biology, a number of studies are in progress. These examine the mechanisms underlying the aetiology of obesity and insulin sensitivity in black and white African women.
- Addison's Disease: Cardiovascular risk factors in Addison's disease has been investigated in collaboration with the University of Gothenberg. The impact of glucocorticoid receptor polymorphisms on cardiovascular risk factors has been assessed in Addison's disease.
- Health Systems Research: The Division collaborates in projects being conducted by the Chronic Diseases Initiative for Africa. These include: a pragmatic cluster randomised trial of an integrated guideline for the management of diabetes and other chronic diseases in the Eden/Overberg primary care setting,, a randomised controlled trial to evaluate the effectiveness of a group diabetic education programme using motivational interviewing in underserved communities; the development of a resource package for primary health care providers and community health workers to enable them to offer brief counselling on lifestyle, evaluation of the roles of community health workers in non communicable disease care in the primary care setting and a randomised trial of the use of mobile phone technology to enhance adherence in people with hypertension.
- Diabetes in the older person In collaboration with the Division of Geriatrics, this study aims to develop a self-Management care program for Older People with Type 2 diabetes attending Community Health Centres in Cape Town.

# **Divisional Statistics**

# Permanent and Long-term Contract Staff

Professor	1
Professor (visiting )	1
Senior Lecturers	2
Senior Registrar in Training	1
Medical Officer (sessional)	1
Diabetes Specialist Nurse	2
Administrative and Clerical Staff	1
Total	8

# **Research Fields and Staff**

# PROFESSOR N S LEVITT

Diabetes and hypertension health systems research, diabetes burden of disease, mechanisms underlying the metabolic sequelae of obesity, metabolic consequences

of HAART and the interaction between tuberculosis and diabetes

# PROFESSOR K STEYN

Hypertension health systems research, burden of chronic disease and smoking in pregnancy

# DR I L ROSS

National registry for Study of Addison's Disease and polyglandular autoimmune syndrome

# DR J DAVE

Metabolic consequences of antiretroviral therapy

# **Contact Details**

Postal Address: Divisions of Endocrinology and Diabetic Medicine, Department of Medicine, Faculty of Health Sciences, Observatory, 7925 Telephone: +27 21 406 6140 Fax: +27 21 406 6513 E-mail: susan.botha@uct.ac.za

# HATTER INSTITUTE FOR CARDIOLOGY Research

# Director: Prof. Karen Sliwa-Hähnle

# **Institute Profile**

Under the directorship of Professor Karen Sliwa, the Hatter Institute for Cardiovascular Research in Africa (HICRA) has been expanded to encompass more clinical research. Our focus is (1) to investigate cardiac disease interlinked with pregnancy (Cardiac Disease and Maternity Group); (2) to undertake African population studies with a focus on translational research (Heart of Africa studies); (3) to develop awareness projects linked to health education in South Africa and Africa (HEDU-Africa), (4) to study the mechanisms of protecting the heart against insults such as lack of blood flow (Cardiac Protection Group) and (5) the genetic basis of cardiomyopathy and other forms of heart disease (Cardiovascular Genetics Group).

Our major goal is to deliver first-class internationally competitive research on the pathogenesis, treatment and prevention of heart disease in Africa. We have set ourselves the goal of taking a dual approach to heart disease research; at the molecular-cellular level and at the population epidemiological level.

Our vision is to facilitate national and international collaborations in its fields of expertise. In order to achieve research excellence we strive to produce work that is published in high impact factor journals and is of relevance to the society in which we live.

HICRA trains a number of Honours, Master's and PhD students in cardio-protection, cardiac signalling, cardiovascular genetics, acute heart failure, pulmonary arterial hypertension and translational preventative research. Several students from other African countries, including Nigeria, Tanzania and Cameroon, are currently undertaking PhD training under the supervision of Professor Karen Sliwa.

# **Research Collaborative initiatives**

# Local collaborations

PROF ZILLA, DR DAVIES, CARDIOVASCULAR RESEARCH UNIT, UNIVERSITY OF CAPE TOWN PROF DAVID MARAIS, DR BLACKHURST, LIPID LABORATORY, UNIVERSITY OF CAPE TOWN DR ROISIN KELLY, HUMAN BIOLOGY DEPARTMENT, UNIVERSITY OF CAPE TOWN PROF JUSTIAAN SWANEVELDER, DEPARTMENT OF ANAESTHESIA, UNIVERSITY OF CAPE TOWN DR TONY LACHMANN, DEPT OBSTETRICS & GYNAECOLOGY, UNIVERSITY OF CAPE TOWN DR CATHERINE ELLIOT, DEPT OBSTETRICS & GYNAECOLOGY, UNIVERSITY OF CAPE TOWN DR JOHN ANTHONY, DEPT OBSTETRICS & GYNAECOLOGY, UNIVERSITY OF CAPE TOWN DR FRIEDRICH THIENEMANN, INSTITUTE OF INFECTIOUS DISEASE & MOLECULAR MEDICINE, UNIVERSITY OF CAPE TOWN AND INTEGERAFRICA PROF AMANDA LOCHNER, PROF FAADIEL ESSOP, PROF FLORIAN BAUER, UNIVERSITY OF **STELLENBOSCH** 

# **Collaborations in Africa**

PROF ALBERTINO DAMASCENO, EDUARDO MONDANE UNIVERSITY, MAPUTO, MOZAMBIQUE PROF ANA MOCUMBI, NATIONAL INSTITUTE OF HEALTH, MAPUTO, MOZAMBIUE PROF CHARLES MONDO, MAKARERE UNIVERSITY, KAMPALA, UGANDA PROF GERALD YONGA, NAIROBI, KENYA PROF E. OGOLA, NAIROBI, KENYA DR R. MVUNGI, DAR ES SALAM, TANZANIA PROF MAHMOUD SANI, KANO UNIVERSITY, KANO, NIGERIA DR O. OGAH, LAGOS, NIGERIA DR D. OJJII, ABUJA, NIGERIA

# International collaborators include:

PROF BERNARD GERSH, PROF LORI BLAUWET, MAYO CLINIC, ROCHESTER, USA PROF D YELLON, HATTER INSTITUTE, UNIVERSITY

# **College London:**

PROF SIMON STEWART, BAKER IDI MELBOURNE AUSTRALIA: PROF DENISE HILFIKER-KLEINER, UNIVERSITY OF HANNOVER, GERMANY; PROF MICHAEL BOEHM, UNIVERSITY OF SAARLAND, GERMANY; PROF SALIM YUSUF, MCMASTER UNIVERSITY, ALBERTA, CANADA PROF MARCELO IRITI, UNIVERSITY OF MILAN, ITALY PROF ANNE JONASSEN, UNIVERSITY OF BERGEN, NORWAY PROF RICHARD JAMES, UNIVERSITY OF GENEVA, SWITZERLAND PROF LUC ROCHETTE, UNIVERSITY OF BURGUNDY, FRANCE PROF MICHAEL SACK, NATIONAL HEALTH INSTITUTE, NEW BETHESDA, USA PROF HUGH WATKINS AND DR MARTIN FARRALL, DEPARTMENT OF CARDIOVASCULAR MEDICINE, UNIVERSITY OF OXFORD, UK PROF BERNARD KEAVNEY AND PROFESSOR PETER AVERY, INSTITUTE FOR LIFE, UNIVERSITY OF NEWCASTLE-UPON-TYNE, UK PROF PETER SCHWARTZ, UNIVERSITY OF PAVIA, ITALY DR DEBO ADEYEMO, HOWARD UNIVERSITY, WASHINGTON DC, USA DR GUILLAUME PARE, MCMASTER UNIVERSITY, HAMILTON, ONTARIO, CANADA PROFJIM DALE, UNIVERSITY OF MEMPHIS, USA PROF JONATHAN CARAPETIS, MENZIES SCHOOL OF HEALTH RESEARCH, DARWIN, AUSTRALIA PROFABRAHAM HAILEAMLAK, UNIVERSITY OF JIMMA, **ETHIOPIA** DR GANESAN KARTHIKEYAN, ALL INDIA INSTITUTE OF MEDICAL SCIENCE, DELHI, INDIA PROF LUIZA GUILERME, UNIVERSITY OF SAO PAULO, SAO PAULO, BRAZIL PROF MASSIMILIANO GNECCI, UNIVERSITY OF PAVIA, ITALY

# **Institute Statistics**

# Permanent and Long-term Contract Staff

Director/Professor	1
Emeritus Professor	1
Associate Professor	1
Clinical Staff	2
Senior Lecturers	2
Senior Researcher	1
Research Staff	6
Laboratory Assistants	2
Administrative and Clerical Staff	1
Total	16

# Honorary Staff

Honorary Professors	4
Total	4

# Students

Postdoctoral research fellows	1
Doctoral	11
Master's	3
Total	15

# **Research Fields and Staff**

PROF KAREN SLIWA-HÄHNLE (CARDIAC DISEASE IN MATERNITY AND HEART OF AFRICA STUDIES) Cardiac disease in pregnancy and heart failure.

# EMERITUS PROFESSOR LIONEL OPIE (ISCHAEMIA)

Delineation of cellular and molecular mechanisms promoting cardiac protection

# PROFESSOR BONGANI MAYOSI (GENETICS GROUP LEADER)

Epidemiology, genetics, and treatment of non-ischaemic heart disease

# ASSOCIATE PROFESSOR SANDRINE LECOUR (CARDIOPROTECTION GROUP LEADER)

Delineation of cellular and molecular mechanisms promoting cardiac protection with special reference to Tumour Necrosis Factor alpha

# MS TASNEEM ADAM

The anti-aging molecules sirtuins and their role in cardioprotection

# **Contact Details**

Postal Address: 4th Floor Chris Barnard Building, Private Bag X3, Observatory, 7925 Tel: +27 (021) 406 6358 Fax: +27 (021) 650 4101 E-mail: Sylvia.Dennis@uct.ac.za Web addresses: http://web.uct.ac.za/depts/medicine and www.hatter.uct.ac.za

# THE ALBERTINA AND WALTER SISULU INSTITUTE OF AGEING IN AFRICA/ DIVISION OF GERIATRIC MEDICINE

# Head of Division of Geriatric Medicine: Professor M Combrinck

# Head of Institute of Ageing in Africa: Dr S. Kalula

# **Institute Profile**

The Albertina and Walter Sisulu Institute of Ageing in Africa (IAA) is a Cross-Disciplinary Group. The IAA represents a coalescence of institute – wide disciplines with a focus on ageing: specifically Geriatric Medicine; Geriatric Neurology; Geriatric Neuropsychology and Old Age Psychiatry. The International Longevity Centre-South Africa is incorporated in the Institute. The vision of the IAA is to be an academic, clinical, research and policy centre of excellence and relevance in Africa. Its mission is to facilitate the delivery of the highest standard of inter-disciplinary, incontext training for health and allied professionals and evidence-based clinical and social care for older people, whilst undertaking appropriate research and audit upon which policy and planning for older persons may be based. The mission is achieved through interdisciplinary partnerships and teamwork, and human resources development within current legal, ethical and financial constraints. The IAA is a leader in the area of research on ageing in sub-Saharan Africa, and enjoys international recognition and acclaim.

# **Institute Statistics**

# Permanent and Long-term Contract Staff

Associate Professor	3
Senior Lecturers	3
Senior Scientific Officer	0
Medical registrars	1
Administrative and Clerical Staff	1
Total	8

# **Honorary Staff**

Visiting Researcher	1
Senior Lecturer	3
Total	4

# Students

Doctoral	2
Master's	6
Total	8

# **Research Fields and Staff**

# DR SEBASTIANA KALULA

Epidemiology of dementia; falls; quality of care.

# DR LINDA DE VILLIERS

Stroke risk factors and rehabilitation; post-discharge stroke community care.

# PROFESSOR MARC COMBRINCK

neuro-inflammation and mechanisms of neurodegeneration with specific reference to cognitive impairment in the elderly and in HIV-associated encephalopathy.

### DR KEVIN G.F. THOMAS

Senior Lecturer, Department of Psychology: geriatric neuropsychology; dementia; impact of stress on memory; impact of life stressors on age-related cognitive decline.

# ASSOCIATE PROFESSOR JOHN A. JOSKA

Senior Lecturer, Division of Neuropsychiatry, Department of Psychiatry and Mental Health: neurocognitive disorders in HIV infection.

# **Contact Details**

Postal Address: The Albertina and Walter Sisulu Institute of Ageing in Africa, Faculty of Health Sciences, University of Cape Town, L51, Old Main Building, Groote Schuur Hospital, Observatory 7925, Cape Town, South Africa. Telephone: +27 21 406 6211 Fax: +27 21 406 6846 E-mail: iaa-institute@uct.ac.za Web: http://www.instituteofageing.uct.ac.za

# DIVISION OF NEPHROLOGY AND HYPERTENSION

# Heads of Division: Associate Professor B.L. Rayner

# **Divisional Profile**

Currently the new division offers a wide range of clinical services including chronic and acute dialysis, renal transplantation, assessment and treatment of a broad range of kidney disease and resistant hypertension, 24 blood pressure monitoring renal biopsies, prevention of chronic kidney, and cardiovascular risk assessment. The unit is supported by a dedicated team of transplant surgeons. Treatment is offered to both private and indigent patients. It also offers outreach programmes to Khayelitsha Community Health Centre and GF Jooste Hospital locally, and to George Hospital, the Northern and Eastern Cape.

There is active training programme for senior registrars in Nephrology and the unit is currently training 6 nephrology fellows. The division supports the Department of Medicine training of medical students, specialist physicians, professions' allied to medicine, renal technologists and the nephrology course for nurses.

The main academic research activities of the division relate to:

- 1. Vitamin D and outcomes in SLE
- 2. systemic lupus erythematosis (SLE) registry
- 3. genetics of salt sensitive hypertension
- 4. diabetic nephropathy and treatment of type 2 diabetes
- 5. classification, genetics, prevalence and treatment of HIV associated nephropathy
- 6. renal anaemia
- 7. HIV associated nephropathy and chronic diseases of lifestyle
- 8. Tenofovir nephrotoxicity
- 9. physiological treatment of hypertension in indigenous people
- 10. ethical consideration for dialysis rationing
- 11. prevalence and outcome of AKI
- 12. assessment of adherence to anti-hypertensive treatment through drug monitoring
- 13. Mesangiocapillary glomerulonephritis
- 14. CAPD registry
- 15. Association of the use of TIK with hypertension and CKD
- 16. Epidemiology of membranous nephropathy
- 17. Renal denervation for resistant hypertension
- 18. Renal denervation for hypertension in transplant patients

- Comparison of FGF23 blood levels in CKD patients on HD. Could differences in levels explain the vascular calcification preponderance in non- blacks?
- 20. Myocardial imaging in HD patients
- 21. Rapidly progressive glomerulonephritis
- 22. Diagnosis of Renal Tb in HIV+ve patients
- 23. Assessment of AV fistulas using MRI scanning

# **Divisional Statistics**

# Permanent and Long-term Contract Staff and students

Total	18
M Phil Students	3
PhD Students	0
Medical registrars	3
Medical officers	3
Part-time consultant	0
Senior registrar	6
Emeritus Professor	1
Senior Lecturers	3
Associate Professors	2

# **Research Fields and Staff**

# ASSOCIATE PROFESSOR C.R. SWANEPOEL

HIV the kidney, renal anaemia, SLE, FGF-23 and renal bone disease, myocardial imaging in dialysis patients

# DR Z BARDAY

Kidney transplantation, renal denervation in kidney transplant patients

### DR IKE OKPECHI

Lupus registry; mesangiocapillary GN, CAPD registry, Rapidly progressive GN

# DR WEARNE

HIV and kidney, tenofovir nephrotoxicity, CAPD registry, HIV and diseases of lifestyle, TB and the kidney

# ASSOCIATE PROFESSOR BRIAN RAYNER

Ethical considerations for dialysis rationing, acute renal failure, Physiological treatment of hypertension, Tik, hypertension and CKD, Therapeutic drug monitoring in hypertension, Renal denervation in resistant hypertension, Salt sensitive hypertension, Diabetic nephropathy, MRI scanning and AV fistulas

# **Contact Details**

Postal Address: E13 Groote Schuur Hospital, Observatory, 7925 Telephone: +27 21 404 3318 Fax: +27 21 404 5215 E-mail: GSH-E13-RU@westerncape.gov.za

# **DIVISION OF LIPIDOLOGY**

# Head of Division: Dr D. Blom

# **Divisional Profile**

Lipidology at UCT is currently spread over two Departments. The Department of Medicine houses the Division of Lipidology (Head: Dr D. Blom) while the Lipid Laboratory is located within the Division of Chemical Pathology (Head: Professor A.D. Marais) in the Department of Clinical Laboratory Sciences. The two components of Lipidology co-operate very closely in the investigation and management of patients. The Division of Lipidology in the Department of Medicine performs the following functions within the limits of funding, staff and facilities: expert clinical consultation, clinical research including drug development studies with the pharmaceutical industry, and ultrasonography for assessment of carotid intima media thickness. The Lipid laboratory provides specialized diagnostic investigations including determination of lipoprotein particle size by non-denaturing gradient gel electrophoresis, ultracentrifugation and analysis of VLDL composition for the diagnosis of dysbetalipoproteinaemia and genotyping to detect mutations in the LDL-receptor. apolipoproteinE and lipoprotein lipase. More specialized investigations such as measurement of 7-dehydrocholesterol for the diagnosis of Smith-Lemli-Opitz syndrome, measurement of plant sterols for the diagnosis of sitosterolaemia, cell culture and analysis of other genes are performed as required. The staff, service and research are funded chiefly by contract research. The Lipid Laboratory receives limited support from the Medical research Council. The clinical research describes the severe dyslipidaemias occurring in the public health sector of the province but includes some referrals from the private sector and academic institutions in the country. Pharmaceutical studies investigate novel lipid modifying agents in severe hypercholesterolaemia, management of severe hypertriglyceridaemia, novel anti-diabetic therapies and studies of cardiovascular outcome with novel agents.

# **Divisional Statistics**

# Permanent and Long-term Contract Staff

Consultants	1
Medical Officers	2
Nursing sisters	3
Contract Dietitian	1
Sonographers	1
Laboratory Technologists	1
Technical Support Staff	1
Administrative Staff	1
Total	11

# Students

Master's	1
Total	1

# **Research Fields and Staff**

# AD MARAIS, DJ BLOM, BC BRICE, KH WOLMARANS, G SOLOMON, RJ JOOSTE

Severe dyslipidaemias including Familial Hypercholesterolaemia, Dysbetalipoproteinaemia, chylomicronaemia.

KH WOLMARANS, Z BEHARDIEN, DJ BLOM, AD MARAIS Carotid intima-media thickness in dyslipidaemic patients

DJ BLOM, G SOLOMON, BD RATANJEE, AD MARAIS Dysbetalipoproteinaemia. Lipodystrophy.

# D J BLOM, KH WOLMARANS, BC BRICE, RJ JOOSTE, R TAYLOR, AD MARAIS.

Anti-sense oligonucleotides for limiting LDL production in homozygous familial hypercholesterolaemia and refractory heterozygous familial hypercholesterolaemia

# DJ BLOM, BC BRICE, KH WOLMARANS, RJ JOOSTE, R TAYLOR

Microsomal triglyceride protein inhibition in homozygous familial hypercholesterolaemia

# DJ BLOM, BC BRICE, KH WOLMARANS, RJ JOOSTE, R TAYLOR

PCSK-9 inhibition for the management of severe hypercholesterolaemia

# DJ BLOM IN COLLABORATION WITH J DAVE OF THE DIVISION OF ENDOCRINOLOGY AND DIABETIC MEDICINE

Lipid metabolism in patients with HIV infection receiving antiretroviral therapy

# DJ BLOM IN COLLABORATION WITH IL ROSS OF THE DIVISION OF ENDOCRINOLOGY AND DIABETIC MEDICINE

Glucocorticoid receptor polymorphisms in patients with Addison's disease

# DM BLACKHURST, AD MARAIS.

Anti-oxidant effects of wine.

# AD MARAIS, BC BRICE, KH WOLMARANS, DJ BLOM, BD RATANJEE IN COLLABORATION WITH PROF G LAMBERT,

Heart Research Institute, Sydney, Australia. Plasma PCSK9 levels in familial hypercholesterolaemia.

# **Contact Details**

Postal Address:

Lipidology, 5<sup>th</sup> Level, C Barnard Building, University of Cape Town, Faculty of Health Science, Anzio Road, Observatory 7925 Telephone: +27 21 406 6166 Fax: +27 21 406 6396 E-mail: elizabeth.phillips@uct.ac.za

# **DIVISION OF NEUROLOGY**

# Head of Division: Associate Professor Alan Bryer

# **Divisional Profile**

We operate a general clinical neurology service at Groote Schuur Hospital. This provides a comprehensive range of clinical activities, including in-patient, consultative, and emergency services. Additionally, there is a clinical neurophysiology laboratory and a dedicated acute stroke unit, as well as specialised clinics for stroke, myasthenia gravis, HIV neurology, neurogenetic disorders, dystonia, and epilepsy.

# Areas of research include:

**Stroke**: Clinical and laboratory based research projects are focussed on causes of stroke in young persons. A longitudinal study of HIV-associated stroke to evaluate the underlying biological mechanisms (specifically endothelial dysfunction and ultrasonographic vascular phenotypes) was commenced in 2010 and continues to date. Our unit is developing an in-service training program for health care workers involved in stroke care in under-resourced settings. The pilot module has been completed and tested for efficacy with favourable result and currently funds are being secured to produce the remaining 9 modules.

**Myasthenia gravis (MG)**: Clinical and Laboratorybased research projects are focussing on improving therapeutic strategies and increasing understanding of disease pathogenesis. These include the following:

- 1. Dr C Freeman was awarded a MMed (Psych) for the dissertation: Psychiatric manifestions in thymomatous vs. non-thymomatous MG patients. Prof Heckmann was the principal supervisor.
- Ms J Auret was awarded MSc (Cell Biol) for her work in examining the effect which standard MG therapies have on DAF (CD55) expression and the implications for MG subjects. Principal investigator: Prof Heckmann was the principal supervisor.
- 3. TGFb polymorphisms and their association with extraocular muscle damage in MG are being studied; Dr M Nel (MRC award) and Dr R Rautenbach (Discovery award).

**HIV/AIDS:** Clinical and Laboratory-based research projects have been established to investigate the risk factors for developing neuropathy complications in HIV-infected subjects.

- 1. Dr J van der Watt, was awarded a PhD for the thesis entitled: HIV-associated sensory neuropathy in an African cohort; a longitudinal study of risk factors predisposing to antiretroviral induced painful neuropathy. Aspects of this work was recently published in *BMC Infect Dis* February 2014.
- Dr C Centner was awarded a MSc (Medicine) for his work on Pyridoxine and NAT-2 genotypes as risk factors for TB-HIV-associated neuropathy. The work was published in the *IJTBLD* January 2014.

Dementia: Prof Marc Combrinck, NRF Chair in Clinical Neurosciences, Divisions of Neurology and Geriatric Medicine.

# **Research projects:**

- 1 The role of systemic inflammation and the apolipoprotein E gene in human immunodeficiency virus-associated cognitive impairment (MSc Med student, Dr Elana van Brakel, thesis completed and to be submitted February 2014).
- 2 The association between physical neurological signs and cognitive impairment in young adults with newly diagnosed Human Immunodeficiency Virus infection (MSc student, Dr Harshadh Jeena).
- 3 The relationship between psychosocial stress, high cortisol, apolipoprotein E4, hippocampal volume and Alzheimer's disease (Ms Katharine James, graduated PhD Dec 2013).
- 4 The relationships between inflammation, neuronal loss, the apolipoprotein E genotype and cognition in community-dwelling older persons in the Cape

metropole (Ms Laurian Grace graduated PhD Dec 2013).

- 5 A prospective, observational cohort study of tuberculous meningitis in adults in Cape Town (study completed, manuscript in preparation. Dr Kathleen Bateman, neurologist).
- 6 The relationships between Vitamin B12, folate, homocysteine, apoE gene and cognition in older South Africans. Dr Ilhaam Mohamed, MSc Med student, thesis completed and to be submitted Feb 2014.
- 7 The role Von Willebrandt Factor and its cleaving enzyme ADAMTS13 in HIV associated stroke. Dr Sameera Allie, MSc Med passed with distinction June 2013. Manuscript in preparation
- 8 A folder review of cases of motor neurone disease seen at Groote Schuur Hospital 2005 to 2010. Dr Amina Daude, MMed part 3, thesis completed to be submitted 2014)

**Epilepsy:** The Neurology Unit plans to construct a web-based distance neurophysiology course for training in electroencephalography (EEG). To this end, approximately R500,000-00 has been raised to date from the World Federation of Neurology, the International League Against Epilepsy and the Neurological Association of South Africa. It is anticipated that the majority of sub-Saharan career neurology registrars will enroll for the 6-month course and that the programme will be up and running by January 2014 and will be tested for efficacy.

**Multi-media teaching**: The use of clinical encounter simulations is currently being developed by Dr Lee-Pan in collaboration with Dr Rachel Weiss.

# **Divisional statistics**

# Permanent and Long-term Contract Staff

Associate Professors (Full-time)	2
Senior Lecturers (Full-time)	3
Lecturers (Part-time)	1
Total	6

# **Postgraduate Students**

MSc Med	8
PhD	3
M. Med	3
Total	14

# Grants:

# MRC SELF-INITIATED GRANT 2013-2015 (PROF COMBRINCK)

NRF research Chair in Clinical Neurosciences (Prof M Combrinck) UCT top-up grant (Prof Heckmann) Post-internship MRC fellowship (M Nel) Discovery fellowships (R Raurtenbach; C Albertyn)

# **Research Fields and Staff**

# ASSOCIATE PROFESSOR A. BRYER

Cerebrovascular Disease; neuro-genetics.

# ASSOCIATE PROFESSOR J. HECKMANN

Myasthenia gravis; HIV neurological disease, HIV neuropathy, neuro-immunology; neuro-genetics.

# DR E. LEE PAN

Health systems information technology; multi-media teaching.

# DR L TUCKER

Epilepsy.

# DR BATEMAN

Infectious Disease Neurology, TBM, HIV peripheral nervous disease, Stroke

# **Contact Details**

Postal Address: E8, New Groote Schuur Hospital, Observatory, 7925 Telephone: +27 21 404 3198 Fax: +27 21 406 6251 E-mail: alan.bryer@uct.ac.za

# DEPARTMENT OF Medicine

# **Research output**

# Authored books

Sliwa, K. and Anthony, J. 2013. Cardiac Drugs in Pregnancy. 131pp. London: Springer. ISBN 9781447154716.

# **Edited books**

Maartens, G., Cotton, M., Wilson, D., Venter, W.D., Meyers, T. and Bekker, L. (eds) 2012. Handbook of HIV medicine. 644pp. 3<sup>rd</sup> edition. South Africa: Oxford University Press Southern Africa (Pty) Ltd. ISBN 9780199053667.

Opie, L.H. and Gersh, B. (eds) 2013. Drugs for the Heart. 573pp. 8<sup>th</sup> edition. USA: Elsevier Sauders. ISBN 9781455733224.

# **Chapters in books**

Duarte, J., Serufuri, J.-M.S., Mulder, N.J. and Blackburn, J. 2013. Protein function microarrays: design, use and bioinformatics analysis in cancer biomarker discovery and quantitation. In X. Wang (ed), Bioinformatics of Human Proteomics, pp. 39-74. London: Dordrecht: Springer. ISBN 9789400758100.

Fox, K., White, H.D., Gersh, B. and Opie, L.H. 2013. Antithrombotic agents: platelet inhibitors, acute anticoagulants, fibrinolytics and chronic anticoagulants. In L. Opie and B. Gersh (eds), Drugs for the Heart, 8<sup>th</sup> edition, pp. 332-397. USA: Elsevier Sauders. ISBN 9781455733224.

Gersh, B. and Opie, L.H. 2013. Which therapy for which condition? In L. Opie and B. Gersh (eds), Drugs for the Heart, 8<sup>th</sup> edition, pp. 463-541. USA: Elsevier Sauders. ISBN 9781455733224.

Gotto, A. and Opie, L.H. 2013. Lipid-modifying and Antiatherosclerotic drugs. In L. Opie and B. Gersh (eds), Drugs for the Heart, 8<sup>th</sup> edition, pp. 398-435. USA: Elsevier Sauders. ISBN 9781455733224.

Maartens, G. 2012. Adverse drug interaction. In M. W.J. Strachan, S.K. Sharma and J.A.A. Hunter (eds), Davidson's 100 Clinical Cases, 2<sup>nd</sup> edition, pp. 374pp. China, Churchill Livingstone Elsevier. ISBN 9780702044595.

Nattel, S., Gersh, B. and Opie, L.H. 2013. Antiarrhythmic drugs and strategies. In L. Opie and B. Gersh (eds),

Drugs for the Heart, 8<sup>th</sup> edition, pp. 272-331. USA: Elsevier Sauders. ISBN 9781455733224.

Opie, L.H., Krum, H., Victor, R.G. and Kaplan, N. 2013. Antihypertensive therapies. In L. Opie and B. Gersh (eds), Drugs for the Heart, 8<sup>th</sup> edition, pp. 224-271. USA: Elsevier Sauders. ISBN 9781455733224.

Opie, L.H. 2013. B-Blocking Agents. In L. Opie and B. Gersh (eds), Drugs for the Heart, 8<sup>th</sup> edition, pp. 1-37. USA: Elsevier Sauders. ISBN 9781455733224.

Opie, L.H. 2013. Calcium channel blockers. In L. Opie and B. Gersh (eds), Drugs for the Heart, 8<sup>th</sup> edition, pp. 65-92. USA: Elsevier Sauders. ISBN 9781455733224.

Opie, L.H., Victor, R.G. and Kaplan, N. 2013. Diuretics. In L. Opie and B.Gersh (eds), Drugs for the Heart, 8<sup>th</sup> edition, pp. 93-118. USA: Elsevier Sauders. ISBN 9781455733224.

Opie, L.H. and Horowitz, J.D. 2013. Nitrates and newer antianginals. In L. Opie and B. Gersh (eds), Drugs for the Heart, 8<sup>th</sup> edition, pp. 38-63. USA: Elsevier Sauders. ISBN 9781455733224.

Opie, L.H. and Pfeffer, M. 2013. Inhibitors of the reninantiogensin aldosterone system. In L. Opie and Bernard Gersh (eds), Drugs for the Heart, 8<sup>th</sup> edition, pp. 119-168. USA: Elsevier Sauders. ISBN 9781455733224.

Opie, L.H. and Meier, J. 2013. Metabolic syndrome, hyperglycemia and type 2 diabetes. In L. Opie and B. Gersh (eds), Drugs for the Heart, 8<sup>th</sup> edition, pp. 436-462. USA: Elsevier Sauders. ISBN 9781455733224.

Senkubuge, F. and Mayosi, B.M. 2013. The state of the national health research system in South Africa. In A. Padarath and R. English (eds), South African Health Review 2012/2013, pp. 141-149. Durban: Health Systems Trust. ISBN 9781919839738.

Sliwa, K. and Tibazarwa, K. 2013. Managing heart failure pre- and postpartum. In K. Sliwa and J. Anthony (eds), Cardiac drugs in Pregnancy, pp. 35-52. London: Springer. ISBN 9781447154716.

Teerlink, J.R., Opie, L.H. and Sliwa, K. 2013. Heart Failure. In L. Opie and G. Bernard (eds), Drugs for the Heart, 8<sup>th</sup> edition, pp. 169-223. USA: Elsevier Sauders. ISBN 9781455733224.

Weiss, R. 2013. Patients as text: collaborative knowledge construction in the context of disability. In C. Ohajunwa and J. McKenzie (eds), Disability Catalyst Africa - Series No. 4: Beyond "if" to "how": Disability Inclusion in Higher Education, pp. 36-45. Cape Town: Disability Innovations Africa. ISBN 9780987020938.

# Articles in peer-reviewed journals

Abboud, H., Labreuche, J., Arauz, A., Bryer, A., Lavados, P.G., Massaro, A., Collazes, M.M., Steg, P.G., Yamout, B.I., Vicaut, E. and Amarenco, P. 2013. Demographics, socio-economic characteristics, and risk factor prevalence in patients with non-cardioembolic ischaemic stroke in low- and middle-income countries: the OPTIC registry. International Journal of Stroke, 8: 4-13.

Abubakar, I., Zignol, M., Falzon, D., Raviglione, M., Ditiu, L., Masham, S., Adetifa, I., Ford, N., Cox, H., Lawn, S.D., Marais, B.J., McHugh, T., Mwaba, P., Bates, M., Lipman, C.I., Zijenah, L., Logan, S., McNerney, R., Zumla, A., Sarda, K., Nahid, P., Hoelscher, M., Pletschette, M., Memish, Z., Kim, P., Hafner, R., Cole, S., Migliori, G.B., Maeurer, M., Schito, M. and Zumla, A. 2013. Drug-resistant tuberculosis: time for visionary political leadership. Lancet Infectious Diseases, 13: 529-539.

Adam, T., Sharp, S., Opie, L.H. and Lecour, S. 2013. Loss of cardioprotection with ischemic preconditioning in aging hearts: role of sirtuin 1? Journal of Cardiovascular Pharmacology and Therapeutics, 18(1): 46-53.

Adams, M., De Kock, C., Smith, P.J., Malatji, P., Hutton, A.T., Chibale, K. and Smith, G.S. 2013. Heterobimetallic ferrocenylthiosemicarbazone palladium(II) complexes: synthesis, electrochemistry and antiplasmodial evaluation. Journal of Organometallic Chemistry, 739: 15-20.

Adams, M., De Kock, C., Smith, P.J., Chibale, K. and Smith, G.S. 2013. Synthesis, characterization and antiplasmodial evaluation of cyclopalladated thiosemicarbazone complexes. Journal of Organometallic Chemistry, 736: 19-26.

Adams, M., Li, Y., Khot, H., De Kock, C., Smith, P.J., Land, K.M., Chibale, K. and Smith, G.S. 2013. The synthesis and antiparasitic activity of aryl- and ferrocenyl-derived thiosemicarbazone ruthenium(II)-arene complexes. Dalton Transactions, 42: 4677-4685.

Allen, E., Chandler, C.I.R., Mandimika, N., Pace, C., Mehta, U.C. and Barnes, K.I. 2013. Evaluating harm associated with anti-malarial drugs: a survey of methods used by clinical researchers to elicit, assess and record participant-reported adverse events and related data. Malaria Journal, 12: 325.

Allen, E., Mushi, A.K., Massawe, I.S., Vestergaard, L.S., Imnge, M., Staedke, S.G., Mehta, U.C., Barnes, K.I. and Chandler, C.I.R. 2013. How experiences become data: the process of eliciting adverse event, medical history and concomitant medication reports in antimalarial and antiretroviral interaction trials. BMC Medical Research Methodology, 13: 140(13pp). Allwood, B.W., Myer, L. and Bateman, E.D. 2013. A systematic review of the association between pulmonary tuberculosis and the development of chronic airflow obstruction in adults. Respiration, 86: 76-85.

Allwood, B.W. 2013. The electronic cigarettes debate. SAMJ South African Medical Journal, 103(11): 832-833.

Ambele, M., Sewell, B.T., Cummings, F.R., Smith, P.J. and Egan, T.J. 2013. Synthetic hemozoin  $\beta$ -hematin) crystals nucleate at the surface of neutral lipid droplets that control their sizes. Crystal Growth & Design, 13: 4442-4452.

Amico, R.K. and Orrell, C. 2013. Antiretroviral therapy adherence support: Recommendations and future directions. Journal of the International Association of Providers of AIDS Care, 12(253): 128-137.

Amornkul, P.N., Karita, E., Kamali, A., Rida, W.N., Sanders, E.J., Lakhi, S., Price, M.A., Kilembe, W., Cormier, E., Anzala, O., Latka, M.H., Bekker, L., Allen, S., Gilmour, J. and Fast, P.E. 2013. Disease progression by infecting HIV-1 subtype in aseroconverter cohort in sub-Saharan Africa. AIDS, 27: 2775-2786.

Andersson, M.I., Maponga, T., Ijaz, S., Barnes, J., Theron, G.B., Meredith, S.A., Preiser, W. and Tedder, R.S. 2013. The epidemiology of hepatitis B virus infection in HIVinfected and HIV-uninfected pregnant women in the Western Cape, South Africa. Vaccine, 31: 5579-5584.

Andrasik, M.P., Karuna, S.T., Nebergell, M., Koblin, B.A. and Kublin, J.G. 2013. Behavioral risk assessment in HIV vaccine trials network (HVTN) clinical trials: a qualitative study exploring HVTN staff perspectives. Vaccine, 31: 4398-4405.

Andrews, J.R., Lawn, S.D., Dowdy, D. and Walensky, R.P. 2013. Challenges in evaluating the cost-effectiveness of new diagnostic tests for HIV-associated tuberculosis. Clinical Infectious Diseases, 57(7): 1021-1026.

Andrews, J.R., Morrow, C.D. and Wood, R. 2013. Modeling the role of public transportation in sustaining tuberculosis transmission in South Africa. American Journal of Epidemiology, 177(6): 556-561.

Asiki, G., Abaasa, A., Ruzagira, E., Kibengo, F., Bahemuka, U., Mulondo, J., Seeley, J., Bekker, L., Delany, S., Kaleebu, P. and Kamali, A. 2013. Willingness to participate in HIV vaccine efficacy trials among high risk men and women from fishing communities along Lake Victoria in Uganda. Vaccine, 31: 5055-5061.

Ayodele, O.E., Okpechi, I.G. and Swanepoel, C.R. 2013. Long-term renal outcome and complications in South Africans with proliferative lupus nephritis. International Urology and Nephrology, 45: 1289-1300. Bahr, N., Boulware, D.R., Marais, S., Scriven, J., Wilkinson, R.J. and Meintjes, G. 2013. Central nervous system immune reconstitution inflammatory syndrome. Current Infectious Disease Reports, 15: 583-593.

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# Peer-reviewed published conference proceedings

Mbogho, A., Dave, J.A. and Makhubele, K. 2013. Diabetes advisor - a medical expert system for diabetes management. Proceedings of AFRICOMM 2013 - Fifth International Conference on e-Infrastructure and e-Services for Developing Countries, 25-27 November 2013, Blantyre, Malawi. Berlin: Springer. ISBN 9781631900006.

Perks, T., Trauernicht, C., Hartley, T., Hobson, C., Lawson, A., Scholtz, P., Dendere, R., Steiner, S.V.G. and Douglas, T.S. 2013. Effect of aluminum filtration on dose and image quality in paediatric slot-scanning radiography. Proceedings of 35th Annual International Conference of the IEEE Engineering in Medicine and Biology Society in Conjuction with the 52nd Annual Conference of Japanese Society for Medical and Biological Engineering (JSMBE), 3-7 July 2013, Osaka, Japan. Piscataway, NJ, United States of America: IEEE EMBS. ISBN 9781457702143.

Springer, D.B., Bobrow, K.L., Levitt, N., Farmer, A. and Tarassenko, L. 2013. The SMS-text adherence support (StAR) study: hardware and software infrastructure. Proceedings of the Sixth International Conference on Information and Communications Technologies and Development, 7-10 December 2013, Cape Town. New York: ACM. ISBN 9781450319072.

# DEPARTMENT OF Obstetrics and Gynaecology

# Head of Department: Professor Lynette Denny

# **Departmental Profile**

# **Our Mission Statement**

- To provide high quality care to all women seeking our services
- To foster a climate of intellectual enquiry
- To pursue excellence in research at every level of care
- To help create a world-class African University

Research is predominantly clinical and largely aligned with our four sub-specialist areas: feto-maternal medicine, gynaecological oncology, reproductive medicine and urogynaecology. Research is conducted at all levels of care and comprises participation in large, international, collaborative trials, cutting edge national research projects, self-initiated local and collaborative studies, as well as smaller individual projects. Several important clinical data bases have been established which provide valuable information in maternal medicine, gynae oncology and reproductive medicine. In addition, our Undergraduate Teaching Unit is actively engaged in education research. Research supervision is provided at the level of MMed and MPhil dissertations and PhD theses to registrars, sub-specialist trainees and staff.

Obtaining an MMed has become a compulsory requirement by the HPCSA for specialist registration, which has greatly increased the need for research supervisors. Our Department has 25 funded registrars in specialist training and 13 supernumerary registrars (all self funded), the majority of whom are non-South African from Malawi, Botswana, Uganda and Zimbabwe.

# Staff and students

### Permanent and long-term contract staff

Professors	3
Associate Professors (full time)	1
Chief Specialist and Level 2 Head	1
Adjunctive Professors (all retired)	3
Senior Lecturers	15
Lecturers (including part-time)	30
Senior Scholar	1
Subspecialist trainees (full time)	4
Subspecialist trainees (part time)	3
Postdoctoral and Research Staff	20
Technical and Support Staff	3
Admin and Clerical Staff	7
Total	91

### Students

Doctoral	2
Master's	35
Undergraduate	775
Total	812

# **Research fields and staff**

### PROFESSOR LYNETTE DENNY

Cervical cancer: prevention in low-resource settings; natural history; precursors in HIV positive women. Other gynaecological cancers: management of endometrial, ovarian cancer and advanced vulval cancer. HPV: prevalence, types; vaccination, DNA typing.

### PROFESSOR SUSAN FAWCUS

Maternal mortality; Perinatal mortality; Intrapartum asphyxia; Magnesium supplementation in pregnancy; Better Birthing Initiative.

Calcium and pre-eclampsia trial, co-investigator Associate Professor John Anthony.

Obstetric haemorrhage pilot project. Multicentre collaborative study. Co-investigator Associate Professor J Anthony.

#### PROFESSOR ZEPHNE VAN DER SPUY

Contraceptive and interceptive development; Polycystic ovary syndrome; Reproductive failure; Endocrine dysfunction in pregnancy; Menopause; Nutrition and reproductive health; Genetics of benign gynaecological conditions.

ASSOCIATE PROFESSOR JOHN ANTHONY

Thrombophilia; Eclampsia; Bioethics.

### PROFESSOR SILKE DYER

Infertility: health-services in low-resource settings, psychosocial consequences, quality of life, HIV.

### ASSOCIATE PROFESSOR PETRUS STEYN

Fertility Regulation and Reproductive Health, Development of Sexuality Education.

### ASSOCIATE PROFESSOR ATHOL KENT

Medical education: Reproducible assessment procedures.

DR SAADIQA ALLIE Obstetric hysterectomy; Teenage pregnancy.

### DR ANNE HORAK

High risk obstetrics; Fetal cardiac abnormalities.

### DR STEPHEN JEFFERY

Refractory overactive bladder syndrome: treatment, epidemiology; HIV and obstetric pelvic floor trauma; surgical repair of posterior compartment prolapse; interdisciplinary patient care;

### DR LYNELLE KENNETH

IUCD in HIV pos women

### DR MUSHI MATJILA

Fetal Anomalies: Antenatal Pyelectasis; Reproductive endocrinology in normal and abnormal pregnancies. PhD thesis (in process): "The role of Kisspeptin and cognate receptor GPR 54 in placentation".

### DR NOMONDE MBATANI

Uterine sarcomas: outcome of treatment; Treatment outcome and complications of gynaecological malignancy.

### DR VANESSA PERROTT

Medical education.

### DR GREG PETRO

Clinical epidemiology; Haemorrhage and transfusion in the obstetric patient; Termination of pregnancy.

### DR LINDA ROGERS

Vulval cancer, MRI Imaging in endometrial and cervical cancer, optimal management of early stage cervical cancer, outcome of ovarian cancer in developing countries.

### DR LEANN SCHOEMAN

High-risk obstetrics; Audit of clinical obstetric management; cardiac disease in pregnancy.

### DR VALENTIN STEFAN

Haemorrhage and transfusion in the obstetric patient.

### DR CHANTAL STEWART

Fetal medicine; Women's expectations of and attitudes to fetal anomaly scans; Preterm labour; Ultrasound screening for risk of pregnancy complications.

### DR HETTA VAN ZYL

Pre-eclampsia, eclampsia and complications; High risk obstetrics; Laparoscopic surgery; Caesarian section: prevalence and outcome.

### DR LINDA WALMSLEY

Infertility: Quality of life, HIV

### Sub-speciality trainees

DR DOMINIC RICHARDS: GYNAECOLOGICAL ONCOLOGY DR KAMENDRAN GOVENDER: GYNAECOLOGICAL ONCOLOGY DR CATHERINE ELLIOTT: MATERNAL AND FETAL MEDICINE DR TEBOGO DEO: REPRODUCTIVE MEDICINE (PART-TIME) DR NURU NKINTO: REPRODUCTIVE MEDICINE (PART-TIME) DR L WALMSLEY: REPRODUCTIVE MEDICINE

### **Registered PhD Students**

DR MALIKA PATEL DR RAKIYA SAIDU

### TEACHING

### Undergraduate

In 2013 there were 1229 students registered in the Faculty of Health Sciences over the 6 years of the MBChB course. The Department of Obstetrics & Gynaecology was responsible for tuition in Years 3, 4, 5 and 6 in both Obstetrics and Gynaecology.

Thus during 2013 approximately 800 students were taught by the O&G Department.

### Visitors

PROF WULF UTIAN, PROF STEVE LINDOW, PROF PHIL STEER, PROF CHARLES WRIGHT AND PROF RAFIQUE PARKER

### **Contact details**

Professor Lynette Denny Head: Department Obstetrics & Gynaecology H45 Old Main Building, Groote Schuur Hospital, Observatory 7925 Tel: 27 21 404 4485 (secretary Jill Artlett) (w) Fax: 27 21 448 6921 Email: lynette.denny@uct.ac.za

### **Research output**

### Authored books

Sliwa, K. and Anthony, J. 2013. Cardiac drugs in Pregnancy. 131pp. London: Springer. ISBN 9781447154716.

### **Chapters in books**

Zweizig, S., Huges, S.H., Denny, L.A. and Cain, J. 2013. End-of-life care. In J. Berek and N. Hacker (eds), Principles and Practice of Gynecology Oncology, 6<sup>th</sup> edition, pp. 1052-1064. USA: Lippincott Williams & Wilkins. ISBN 9781451176599.

### Articles in peer-reviewed journals

Adefuye, P.O., Broutet, N., De Sanjose, S. and Denny, L.A. 2013. Trials and projects on cervical cancer and human papillomavirus prevention in sub-Saharan Africa. Vaccine, 31S: F53-F59.

Al-Khan, A., Bulmer, J.N., Chantraine, F., Chen, C.P., Chen, Q., Collins, S., Cotechini, T., Fitzgerald, J.S., He, M., Holland, O., Hung, T., Illsley, N., Ino, K., Iwaki, T., Kanayama, N., Kaneki, E., Katabuchi, H., Kobayashi, Y., Kondo, A., Masuzaki, H., Matjila, M., Miura, K., Mori, A., Murthi, P., Nagahashi, K., Nie, G., Ohba, T., Sood, R., Sugimura, M., Takizawa, T., Usui, H., Velicky, P. and Lash, G. 2013. IFPA meeting 2012 Workshop Report III: trophoblast deportation, gestational trophoblastic disease, placental insufficiency and fetal growth restriction, trophoblast over-invasion and accreta-related pathologies, placental thrombosis and fibrinolysis. Placenta, 27: S11-S16.

Arend, E., Maw, A., de Swardt, C., Denny, L.A. and Roland, M. 2013. South African sexual assault survivors' experiences of post-exposure prophylaxis and individualized nursing care: a qualitative study. Janac-Journal of the Association of Nurses in Aids Care, 24(2): 154-165. Awolude, O.A., Denny, L.A. and Adewole, I.F. 2013. Human Papillomavirus infection and related cancers in sub-Saharan Africa: burden and tools for prevention. Vaccine, 31S: vii-x.

Belhadj, H., Rasanathan, J.J.K., Denny, L.A. and Broutet, N. 2013. Sexual and reproductive health and HIV services: integrating HIV/AIDS and cervical cancer prevention and control. International Journal of Gynaecology & Obstetrics, 121(SUPPL1): S29-S34.

Bere, A., Denny, L.A., Naicker, P., Burgers, W. and Passmore, J. 2013. HIV-specific T-cell responses detected in the genital tract of chronically HIV-infected women are larely monofunctional. Immunology, 139(3): 342-351.

Boa, R. 2013. Female sexual pain disorders. O & G Forum Obstetrics & Gynaecology Forum, 23(4): 27-31.

Bosch, F.X., Broker, T.R., Forman, D., Moscicki, A., Gillison, M., Doorbar, J., Stern, P.L., Stanley, M., Arbyn, M., Poljak, M., Cuzick, J., Castle, P.E., Schiller, J.T., Markowitz, L.E., Fisher, A., Canfell, K., Denny, L.A., Franco, E.L., Steben, M., Kane, M.A., Schiffman, M., Meijer, C.J.L.M., Sankaranarayanan, R., Castellsague, X., Kim, J., Brotons, M., Alemany, L., Albero, G., Diaz, M. and De Sanjose, S. 2013. Comprehensive control of human papillomavirus Infections and related diseases. Vaccine, 31S: 11-131.

Davey, D.A. 2013. Alzheimer's disease, dementia, mild cognitive impairment and the menopause: a 'window of opportunity'? Women's Health, 9(3): 279-290.

Davey, D.A. 2013. HRT: Some unresolved clinical issues in breast cancer, endometrial cancer and premature ovarian insufficiency. Women's Health, 9(1): 59-67.

Davey, D.A. 2013. Menopausal hormone therapy post WHI: a window of opportunity? O & G Forum Obstetrics & Gynaecology Forum, 23(4): 21-24.

De Vuyst, H., Alemany, L., Lacey, C., Chibwesha, C.J., Banura, C., Denny, L.A. and Parham, G. 2013. The burden of human papillomavirus infections and related diseases in sub-Saharan Africa. Vaccine, 31S: F32-F46.

Denny, L.A. 2013. Staging of ovarian cancer: time to subdivide more? Journal of Gynecologic Oncology, 24(4): 293-294.

Denny, L.A. and Kim, J. 2013. European costeffectiveness analysis of cervical screening strategies for women not vaccinated for HPV: in many scenarios primary HPV screening is preferable to primary cytology screening in women aged over 30 years. Evidence Based Nursing, 16(1): 8-9. Denny, L.A., Hendricks, B.T., Gordon, C., Thomas, F., Hezareh, M., Dobbelaere, K., Durand, C., Herve, C. and Descamps, D. 2013. Safety and immunogenicity of the HPV-16/18 AS04-adjuvanted vaccine in HIV-positive women in South Africa: a partially-blind randomised placebo-controlled study. Vaccine, 31: 5745-5753.

Denny, L.A., Sankaranarayanan, R., De Vuyst, H., Kim, J., Adefuye, P.O., Alemany, L., Adewole, I.F., Awolude, O.A., Parham, G., De Sanjose, S. and Bosch, F.X. 2013. Recommendations for cervical cancer prevention in sub-Saharan Africa. Vaccine, 31S: F73-F74.

Dyer, S.J., Sherwood, K., McIntyre, D.E. and Ataguba, J.E. 2013. Catastrophic payment for assisted reproduction techniques with conventional ovarian stimulation in the public health sector of South Africa: frequency and coping strategies. Human Reproduction, 28: 2755-2764.

Fawcus, S. 2013. A review of uterine rupture and maternal mortality from this cause in South Africa, 2008-2010. O & G Forum Obstetrics & Gynaecology Forum, 23(3): 15-19.

Fawcus, S. and Moodley, J. 2013. Alert for maternal deaths due to obstetric haemorrhage. O & G Forum Obstetrics & Gynaecology Forum, 23(3): 33-34.

Fawcus, S. and Moodley, J. 2013. Postpartum haemorhage associated with caesarean section and caesarean hysterectomy. Best Practice & Research in Clinical Obstetrics & Gynaecology, 27: 233-249.

Jacobson, B.F., Louw, S., Buller, H.R., Mer, M., De Jong, P.R., Rowji, P., Schapkaitz, E., Adler, D., Beeton, A., Hsu, H., Wessels, P.F. and Haas, S. 2013. Venous thromboembolism: prophylactic and therapeutic practice guideline. SAMJ South African Medical Journal, 103(4): 260-267.

Kennedy, D. 2013. Techniques for caesarean section - a re-appraisal. Obstetrics and Gynaecology Forum, 23(4): 14-19.

Kent, A. 2013. Genome sequencing for obstetricians & gynaecologists. O & G Forum Obstetrics & Gynaecology Forum, 23(4): 7-10.

Kingham, T.P., Alatise, O.L., Vanderpuye, V., Casper, C., Abantanga, F.A., Kamara, T.B., Olopade, O.I., Habeebu, M., Abdulkareem, F.B. and Denny, L.A. 2013. Treatment of cancer in sub-Saharan Africa. Lancet Oncology, 14(4): e158-e167.

Matjila, M., Millar, R.P., Van Der Spuy, Z.M. and Katz, A.A. 2013. The differential expression of Kiss 1, MMP9 and angiogenic regulators across the feto-maternal

interface of healthy human pregnancies: implications for trophoblast invasion and vessel development. PLoS One, 8(5): e63574.

Moodley, I., Tathiah, N., Mubaiwa, V. and Denny, L.A. 2013. High uptake of Gardasil vaccine among 9 - 12 year old schoolgirls participating in an HPV vaccination demonstration project in KwaZulu-Natal, South Africa. SAMJ South African Medical Journal, 103(5): 318-321.

Morhason-Bello, I., Odedina, F., Rebbeck, R., Harford, J., Dangou, J., Denny, L.A. and Adewole, I.F. 2013. Challenges and opportunities in cancer control in Africa: a perspective from the African Organisation for research and training in cancer. Lancet Oncology, 14(4): e142-e151.

Sankaranarayanan, R., Anorlu, R., Sangwa-Lugom, G. and Denny, L.A. 2013. Infrastructure requirements for human papillomavirus vaccination and cervical cancer screening in sub-Saharan Africa. Vaccine, 31S: F47-F52.

Stewart, C. 2013. Challenges in the management of twin pregnancy discordant for abnormality. Obstetrics and Gynaecology Forum, 22: 7-11.

Steyn, P.S. and Goldstuck, N. 2013. Postpartum Contraception. Obstetrics and Gynaecology Forum, 23(1): 9-13.

Tathiah, N., Moodley, I., Mubaiwa, V., Denny, L.A. and Taylor, M. 2013. South Africa's nutritional transition: overweight, obesity, underweight and stunting in female primary school learners in rural KwaZulu-Natal, South Africa. SAMJ South African Medical Journal, 103(10): 718-723.

Thomas, V., Knight, R., Haswell, S., Lindow, S. and Van Der Spuy, Z.M. 2013. Maternal hair selenium levels as a possible long-term nutritional indicator of recurrent pregnancy loss. BMC Women's Health, 13: 40(6pp).

Van Der Spuy, Z.M. 2013. Millennium development goal 5b - new challenges. O & G Forum Obstetrics & Gynaecology Forum, 23(4): 3.

# DEPARTMENT OF Paediatrics and child Health

The Department of Paediatrics and Child Health is a large department in the Faculty of Health Sciences, encompassing the field of general paediatrics as well as a full spectrum of paediatric medical subspecialties. Other disciplines affiliated with the Department make up the School of Child and Adolescent Health. The Department provides clinical services at the Red Cross War Memorial Children's Hospital, Groote Schuur Hospital, Somerset Hospital, Mowbray Maternity and Victoria Hospital. These venues also provide the major teaching and training sites for undergraduate and postgraduate training in Paediatrics and Child Health. All paediatric registrars are now required to register for a MMed degree as part of their training.

The department has a wide breadth of clinical research activities with a substantial research output especially in the areas of priority child health problems such as tuberculosis, pneumonia, infectious diseases and HIV. In 2013, a new, expanded clinical research unit, the Research Centre for Adolescent and Child Health (REACH) was opened at Red Cross War Memorial Children's Hospital, as the existing unit had been outgrown. Current studies located in REACH include studies of childhood pneumonia, diarrhoea, pertussis, paediatric TB and of HIV-associated illness. There are approximately 30 staff members located in REACH, funded on grant support, mainly awarded by international funding agencies including the National Institute of Health (NIH) USA, Wellcome Trust, Global Alliance for Vaccines and Immunisation(GAVI) and the Gates Foundation. REACH serves as a central hub supporting satellite clinical research sites in secondary and community based facilities. A unique birth cohort study, the Drakenstein Child Lung Health study funded by the Gates Foundation, to investigate the early life determinants of child health is now well established in Paarl; this study involves collaborations across a number of departments in the Faculty of Health Sciences and with several international collaborators. There are 3 NRF rated researchers in the Department including one A-Rated person.

# Professor and Head of Department: Professor Heather Zar

## **General Paediatrics**

- Emergency Unit
- Inpatient unit

### **Subspecialties:**

- Adolescent Medicine
- Allergy
- Cardiology
- Critical Care
- Endocrine
- GIT
- Haematology/Oncology
- Infectious Diseases
- Neonatology
- Nephrology
- Neurodevelopment
- Neurology
- Pulmonology
- Rheumatology

### **Affiliated Disciplines**

- Allied Health Sciences
- Dietetics
- Child & Adolescent Psychiatry
- Child Health Unit
- Children's Institute
- Dermatology
- Nuclear Medicine
- Paediatric Anaesthesia
- Palliative Care
- Paediatric Pathology
- Paediatric Radiology
- Paediatric Surgery
- Poisons Centre
- South African Tuberculosis Vaccine Initiative
  (SATVI)-IIDMM

# **Departmental Statistics**

### Permanent and long-term contract staff

Professors	3
Associate Professors	10
Emeritus Professors	3
Emeritus Associate Professors	6
Honorary Senior Lecturers	12
Honorary Lecturers	2
Senior Lecturers (full time)	31
Lecturers (full time)	3
Senior Lecturers (part time)	7
Lecturers (part-time)	8
Research Staff	71
Administrative and clerical staff	16
Total	172

### Students

Doctoral	12
Master's	45
- MPhil	39
PG Diploma (Child Nurse Practice)	34
Undergraduate	563
Total	693

### **Research Fields and Staff**

### J. AHRENS

Experience of the pandemic (H1N1) influenza A at Red Cross Hospital ICU in 2009; Analysis of referrals to the Paediatric ICU, Red Cross children's Hospital, over 6 months in 2008

### A.C. ARGENT

Respiratory mechanics in croup; respiratory mechanics and endotracheal suctioning; electrical impedance tomography and respiratory disease in the PICU; care practices and inter-personal relationships in ICU; quality of care and safety in the PICU; management of traumatic brain injury in PICU; HIV in the PICU; fluids in the critically ill; prevention of nosocomial infections including ventilator associated pneumonia and central line sepsis; viral infections in the PICU; cardiomyopathy / myocarditis in children; ethical issues in resource allocation in the PICU; severe sepsis and septic shock; "Pathways to care" for critically ill children; training and simulation training for healthcare workers working with critically ill or injured children.

H. BARLOW

Nurses and Care.

### C. BONACONSA

Paediatric stabilization in critical care; ethnography

### H. BUYS

Ambulatory, emergency and outreach care; paediatric HIV disease and nutrition; diarrhoeal disease.

### M. CARRIHILL

Type 1 diabetes in the South African youth; Neonatal screening programmes; Disorders of sex development.

### M COETZEE

Improvement science in clinical paediatrics; models of paediatric nursing care; participative approaches – postgraduate curriculum development and clinical practice development

### G COMITIS

Kawasaki disease; Myocarditis / dilated cardiomyopathy; Cardiac CT angiography; Post-operative outcomes in AVSD repairs, systemic to pulmonary shunts, Tetralogy repairs; Cardiac MRI (in future); Interventional catheterizations especially aortic coarctation and pulmonary artery stenting; Electrophysiology studies and ablations; Transvenous pacemakers

### ML COOKE

General paediatrics and gastroenterology

### A. DAVIDSON

HIV-related malignancy; Brain tumours; the impact of ethnicity on ALL outcomes; Stem Cell Transplantation for Immunodeficiency.

### C. DAVIS

Paediatric critical care, nurse to nurse communication and the action research methodology

### R. DE DECKER

The 22q11.2 deletion syndrome; Warfarin: implementation and impact; Genetic associations of congenital heart disease.

### R. DE LACY

Cystic fibrosis; gastroenterology.

### S. DELPORT

Abnormalities of growth; abnormal pubertal development; advances in diabetes care.

### R. DIEDERICKS

Emergency paediatrics; Infectious Diseases.

### K. DONALD

Developmental disabilities as they manifest and are managed in resource limited settings such as South Africa (including Cerebral palsy, Autism, Intellectual disability, genetic syndromes). Specific interests include the preventable causes of neurodisability such as alcohol and methamphetamine exposure, organophosphate poisoning and the neurological and neurocognitive complications of HIV.

### R. DUNKLEY

Learning from mortality; improving flow and bed management in the hospital to cope with the Surge season

### B.S. ELEY

Primary immune deficiency disorders; paediatric tuberculosis; paediatric HIV/AIDS; paediatric infectious disease.

### P. GAJJAR

Renal disease; paediatric organ transplantation especially infectious complications; paediatric hypertension including Takayasu's Arteritis; acute renal failure and peritoneal dialysis; paediatric HIV nephropathy; adolescent medicine.

### E. GODDARD

Paediatric liver disease; transplantation in children; immunology; paediatric infectious disease; paediatric gastroenterology and nutrition.

### C. GRAY

Food allergies and eczema

### M. HARRISON

Preterm outcomes; Neonatal respiratory disease; Hypoxic Ischaemic Encephalopathy.

### M. HENDRICKS

Clinical Outcomes in children with rhabdomyosarcoma at Red Cross Children's Hospital.

### M.K. HENDRICKS

Public health nutrition; children's rights; community child health

### I. HENDRY

Post-graduate education; clinical nursing research and forensic nursing

### L. HENLEY

Research ethics

### J. HEWITSON

Resource allocation and cardiovascular disease; Trisomy 21 and cardiovascular disease; surgical management of patients with a single ventricle.

### A. HORN

Epidemiology; assessment and management of Hypoxic Ischaemic Encephalopathy.

### Y. JOOLAY

Neonatology

### M. KIBEL

Child Health generally (Community Paediatrics), and Childhood TB

### S.M. KROON

Mother-to-child transmission of HIV; Human Milk Banking

### A. LEONARD

Implementation research (evidence based practice and improvement research)

#### M. LEVIN

Genotypic and phenotypic features of allergic Xhosa children; Prevalence and associations of food allergy in unselected children in Cape Town and in the Eastern Cape; relationship between food allergy and atopic dermatitis; the impact of demographic, environmental, nutritional and infectious influences on the expression of allergy and atopy within the Drakenstein birth-cohort study; allergy and atopy in children with Vernal Keratoconjunctivitis; communication issues in management of asthma and allergy in indigenous people in South Africa.

#### J. LAWRENSON

Developing standards for echocardiographic screening of individuals to detect subclinical rheumatic heart disease; Thoracopagus conjoined twins; Cardiovascular disease in patients with HIV disease.

#### L. LINLEY

Kangaroo mother care; HIE and the effect of head cooling; ethical issues in neonatal care.

#### M. MCCULLOCH

Acute kidney injury especially in PICU setting; Acute Peritoneal dialysis in Children and Infants; Fluid management in Emergency and PICU settings; Transplantation(Renal, Liver and Cardiac) as well as Development of Paediatric Transplantation programmes and Young Adult Transition; Long-term follow-up of steroid withdrawal in transplantation; Takayasu's arteritis; Atypical hemolytic uremic syndrome; Training of African Fellows in PICU/Nephrology and Challenges faced on return home.

### G. MOLLER

Neonatal jaundice

### B. MORROW

Paediatric respiratory infections; nosocomial infections in the PICU; distribution of ventilation in children with and without lung disease; respiratory mechanics; cystic fibrosis; resource allocation in PICU; paediatric cardiopulmonary physiotherapy.

### R. MULOIWA

Pertussis in children hospitalised with Lower Respiratory Tract Infection (LRTI).

### S. NAIDOO

Aeroallergen sensitisation and the prevalence of asthma, allergic rhinitis, and eczema in children with Vernal Keratoconjunctivitis.

### A. NDONDO

Hydatid disease of the spine; epilepsies in childhood;neurometabolic disorders; the ketogenic diet in the African context; Rett syndrome; optimal management of refractory status; non-polio enterovirus infections; childhood stroke.

### P. NOURSE

Peritoneal dialysis; glomerulonephritis including HIV.

#### J. NUTTALL

Infants, children and adolescents with HIV infection and HIV/TB co-infection including early infant diagnosis; performance of HIV rapid tests in young children; drug dosing and pharmacokinetics; treatment failure and drug resistance. Antimicrobial stewardship.

R. PETERSEN CEREBRAL PALSY.

### M.S. RABAN

Neonatology

### V. RAMANJAM

Phenotype, neuroimaging and neurocognitive characteristics of children with neurofibromatosis type 1; DAX1 mutation; investigating the prevalence, comorbidities and responses to different forms of medical therapy for children and adolescents with ADHD.

### M. RICHARDS

General and Developmental medicine

#### G. RIORDAN

Paediatric epilepsy; ADHD; mitochondrial disease; juvenile Huntingtons disease

### B. ROSSOUW

Cardiac critical care: dilated cardiomyopathy in RCWMCH PICU; ALCAPA in RCWMCH PICU

### P. ROUX

Early Childhood Development and psycho-social aspects of care for children and adolescents with HIV/AIDS.

# S. SALIE

Sepsis, HIV and fluid resuscitation.

### **B. SCHLEGEL**

Tuberous sclerosis.

### C. SCOTT

Paediatric Systemic Lupus Erythematosus; Juvenile Idiopathic Arthritis; Fibrodysplasia Ossificans Progressiva; HIV Arthropathy; Juvenile Dermatomyositis and Childrens Rights

### A. SPITAELS

Paediatric endocrinology, metabolism and diabetes; social circumstances, diabetes control, intersex.

#### G. SWINGLER

Systemic literature reviews.

#### C. THOMSON

Follow-up of the high risk infant; HIE and the effect of head cooling

#### L. TOOKE

Neonatal research especially congenital infections, HIV and the care of the VLBW.

#### A. (NIKI) VAN NIEKERK

Neonatology and Neonatal cardiology.

### A VAN EYSSEN

Pharmacogenomics in patients treated at Red Cross Hospital with Acute Lymphoblastic Leukaemia; the use of flow cytometry in evaluating minimal residual disease in B Lineage Acute Lymphoblastic Leukaemia at Red Cross Hospital.( In conjunction with Dr W Van Schalkwyk of the NHLS)

#### A. VANKER

Indoor air pollution and tobacco smoke exposure and the effects on lung health.Determinants of childhood pneumonia.

### K. WALKER

Sydenham's chorea: post streptococcal movement disorders. Point of care INR testing. Cardiac management of Duchenne's Muscular Dystrophy. HIV encephalopathy and HIV associated neurocognotive deficits in children. Use of Methylphenidate and management of ADHD in HIV.

#### K. WEBB

Paediatric rheumatology and immunology

### A.T. WESTWOOD

Coordination of health services; quality of health care; Epidemiology, diagnosis and management of cystic fibrosis in South Africa; management of acute diarrhoea; causes of death among children; epidemiology of chronic illness in South Africa; health systems for children with long-term health conditions; policy perspectives on children with long term health conditions.

### P. WICOMB

Medical Education

### J. WILMSHURST

Spinal muscular atrophy; limb girdle muscular dystrophy; peripheral neuropathies; congenital myopathies; complex epilepsies in childhood; role of video telemetry in paediatric neurology practice; neurofibromatosis; paediatric spinal pathologies; neuroradiological diagnostic and prognostic indicators of TBM, neurological manifestations of HIV; rare neuromuscular disorders; tuberous sclerosis; ketogenic diet in epilepsy; child neurology training in Africa; child neurology service capacity in Africa; guidelines for management of epilepsy disorders (for the ILAE).

### M. ZAMPOLI

Childhood respiratory infections; HIV-associated lung disease; Cystic fibrosis; respiratory manifestations of neuromuscular disease and Sleep medicine.

### H. ZAR

Childhood TB (specifically new diagnostic strategies), childhood pneumonia, HIV-associated lung disease; childhood asthma. Drakenstein child lung health study, a birth cohort study to investigate the antenatal and early life determinants of child health

# **Contact Details**

Postal Address: Department of Paediatric Medicine and Child Health, University of Cape Town, Red Cross Children's Hospital, Rondebosch, 7700 Tel: +27 21 658 5324 Fax: +27 21 658 1287 Web:http://www.scah.uct.ac.za UCT General enquiries: +27 21 650 9111 UCT web: http://www.uct.ac.za Research coordinator: Geanine Hopley @ 021-6860086 Email: geanine.hopley@uct.ac.za

# DEPARTMENT OF Paediatrics and child Health

**AFFILIATED DISCIPLINES:** 

# **ALLIED HEALTH SCIENCES**

# **Unit Representative: Sameer Rahim**

### **Department Structure:**

### Manager [Head of Unit] of Allied Health Professionals: Dr T Blake

### HOD of each department:

- Dietetics: Shihaam Cader
- Occupational Therapy: Mereille Pursad
- Physiotherapy: Sameer Rahim
- Audiology: Colleen Cox
- Social Worker: Andre Pieters
- Speech Therapy: Lezanne LeRoux

### **Unit Profile**

The Unit of Associated Paediatric Disciplines is multidisciplinary, including all the paediatric therapy professions of Physiotherapy, Occupational Therapy, Dietetics/Nutrition, Speech Therapy, Audiology and Social Work. The Division undertakes undergraduate and postgraduate teaching and training in all aspects of paediatric care, both acute and chronic. The Division is active in conducting research in Paediatric fields, often collaborating with members of other Divisions. The individual departments also run departmental weekly and monthly CPD programs accredited by UCT.

# **Unit Statistics**

### Students

Master's	3
Total	3

# Permanent and long-term contract staff (PGWC)

Permanent staff (Full time)	34
Permanent staff (Part time)	2
Community service	5
Total	41
Undergraduate students	168
Elective registered via UCT	2
Post graduate students (nursing and allied health)	114
Total	284

# **Research Fields and Staff**

### LEZANNE LE ROUX (SPEECH THERAPY)

The Nature of Feeding and Swallowing Difficulties in the Paediatric Cerebral Palsy Population Who Have Had Videoflouroscopic Swallow Studies. (Completing in 2014)

### SHAFEEQAH NANA (SPEECH THERAPY)

Master's in Early Communication Intervention (course work)- Univ of Pretoria (commenced 2014)

### Physiotherapy

The epidemiology of children with Cerebral Palsy attending the physiotherapy department and the Western Province Cerebral Palsy Association (WPCPA) Cerebral Palsy (CP) Clinic at Red Cross War Memorial Children's Hospital over three months.

### DES SCOTT (PHYSIOTHERAPY)

MSc Physiotherapy: The association between Health Related Quality of Life, Health Condition and Function in South African children. A pilot study.

### JANINE VERSTRAETE (PHYSIOTHERAPY)

MSc Physiotherapy: Development of an English Health Related Quality of Life measure, for children under the age of 6, to be completed by proxy

### LIESELOTTE CORTEN (PHYSIOTHERAPY PHD STUDENT)

The use of Assisted Autogenic Drainage in children with acute respiratory disease in a developing country.

# SHIHAAM CADER [IN COLLABORATION WITH EDWARD KIJA FROM NEUROLOGY]

Bone metabolism abnormalities in children with Epilepsy at Red Cross War Memorial Children's Hospital, Capetown South Africa.(commence 2014)

# DEPARTMENT OF CHILD AND Adolescent Psychiatry

# Head of Clinical Unit: Dr Wendy Vogel Academic Lead: Prof Petrus de Vries

# **Unit Profile**

The Division of Child & Adolescent Psychiatry (DCAP), is based at 46 Sawkins Road, Rondebosch, and is part of the Department of Psychiatry and Mental Health. Clinical services are rendered as part of Red Cross War Memorial Children's Hospital. As such, DCAP therefore works in close collaboration between the departments of Psychiatry and Paediatrics. The clinical services are offered by four main teams: an Outpatient Team, a Consultation-Liaison Team, an Infant Mental Health Team and by the Therapeutic Learning Centre (TLC), an in-patient unit for children under 13 years. The Division is very active in training across disciplines, ranging from medical students, psychiatric registrars (M.Med) to advanced nursing students and clinical psychology interns. The Division offers a two-year M. Phil. (Child and Adolescent Psychiatry) degree, which leads to registration with the HPCSA as a sub-specialist in Child and Adolescent Psychiatry. In addition, staff members in the Division supervise candidates for postgraduate degrees such as Master's and Doctoral degrees.

# Research at DCAP is organised around five main themes:

- a) Centre for Autism in Africa an interdisciplinary, interfaculty research group with interest in building a research base for research about autism in Africa. Activities include tool development, translation, validation, training and involvement with NPO sector. (Steering Group: Prof Petrus de Vries, Dr Wendy Vogel, Dr Kirsty Donald, Prof Colleen Adnams, Dr Susan Malcolm-Smith, Dr Colleen O'Ryan, Dr Nokuthula Shabalala, Michelle Hoogenhout)
- b) Adolescent Health Research Unit a UCTaccredited research unit with specific focus on health and health promotion in adolescents. Activities include a large-scale community education programme to reduce risk behaviours and intimate partner violence in 12-14 year olds in the Western Cape Province (Director: Prof Petrus de Vries; Co-director: A/Prof Cathy Mathews)
- c) Tuberous Sclerosis Complex Research Programme – an international research programme, specifically focusing on molecularly targeted treatments of TSC and the neuropsychiatry of TSC. Recent activities included development and validation of a checklist for the neuropsychiatric manifestations of the disorder (Head: Prof Petrus de Vries).

- d) Infant Mental Health Programme A developmental research programme of parent-infant mental health work forcusing on mentalisation and mentalisation-based interventions for high-risk families (Head: A/Prof Astrid Berg)
- e) DCAP Research Development Programme a staff research development programme. Activities include research development workshops, writing workshops and research capacity building in existing staff (Lead: Prof Petrus de Vries)

# **Unit Statistics**

# Joint staff

Professor	1
Associate Professor	1
Senior Lecturers	6
Emeritus Professor	1
Honorary staff	3
Administrative staff	0.5
Total	12.5

Permanent provincial staff = 26

Trainee staff (junior registrars, senior registrars, intern psychologists) = 8

Registered Students supervised by DCAP staff in 2013

–MSc (Neurosci)	1
M.Med	2
M.Phil	3
Other	2
Total	8

# **Contact Details**

Postal Address: Division of Child and Adolescent Psychiatry, 46 Sawkins Road, Rondebosch, 7700 Tel: +27 21 685 4103 Fax: +27 21 689 1343

Please refer to the Psychiatry and Mental Health Research Report for publications by members of the Division of Child and Adolescent Psychiatry.

# DEPARTMENT OF Paediatrics and child Health

**AFFILIATED DISCIPLINES:** 

# **CHILD HEALTH UNIT**

# **Director: Rotating Acting Head**

# **Unit Profile**

The Child Health Unit's mission is to contribute to promoting equity in child health. The core business of the Unit is directed at children's public health and community-oriented child health promotion, protection, care and rehabilitation.

The target of the Unit's endeavours is those areas, which have a strong children's public health and interdisciplinary focus, viz. child development and disability, community nutrition, infectious diseases and health policy and service development. The Unit has close links with the Children's Institute.

# **Unit Statistics**

# Permanent and long-term contract staff

Associate Professor (part-time)	1
Emeritus Professor (part-time)	2
Specialist	2
Sub-specialist trainees	2
Senior Lecturers (part-time)	4
Lecturers	2
Administrative staff	1
Total	14

# **Research Fields and Staff**

### J. SHEA

Health promotion and education; the adaptation and piloting of a behavioural intervention to support HIV+ women in the core domains of health, mental health, parenting and HIV prevention for use by non-governmental organizations; an assessment of the feasibility of intervention trials on tuberculosis prevention in schools in the Western Cape Province; development of a certificate course in clinical research.

# **CHILDREN'S INSTITUTE**

# Director: Associate Prof. Shanaaz Mathews

# **Institute Profile**

The Children's Institute aims to contribute knowledge and understanding to promotion of policies which govern improvement of child well-being, and fulfillment of the rights of all South Africa's children, with special emphasis on children rendered vulnerable by a range of difficult circumstances. It addresses the needs and rights of South Africa's children through policy research, advocacy and education and other academic activities that contribute to improvement in the policy analysis, formulation, implementation and evaluation processes.

# **Institute Statistics**

### Permanent and long-term contract staff

Professors	1
Senior Lecturers (Snr Researchers)	5
Lecturers (Researchers)	1
PASS (Administrative)	4
PASS (Scientific and Technical)	4
Total	15

### Students

PhD	2
Master's	2
Total	4

## **Research Fields and Staff**

### ASSOCIATE PROFESSOR SHANAAZ MATHEWS

Director; Children & violence, child protection, child abuse, gender policy, gender-based violence, evidence-based programming.

### LIZETTE BERRY

Senior researcher; Child socio-economic rights indicators; child poverty.

### DR ARIANE DE LANNOY

Senior researcher; Youth and youth identity in rapidly changing, urban environments; Perceptions of opportunity structure; Education, identity and educational decision-making.

### KATHARINE HALL

Senior researcher; social policy; Child poverty and inequality; social grants; households and mobility; indicators

### LUCY JAMIESON

Senior advocacy co-ordinator; Child rights; participatory democracy; governance; law reform & policy development; child protection.

### HELEN MEINTJES

Senior Researcher; HIV/AIDS & children; alternative care; social policy; children's participation; media

### DR TENDAI NHENGA-CHAKARISA

Senior researcher; International law; human rights law; child rights; child labour; applying international children's rights law in African cultural contexts; curriculum design & legal drafting.

### PAULA PROUDLOCK

Programme manager; Child rights; legislative review; law reform; democracy & governance; socio-economic rights for children.

### WINNIE SAMBU

Researcher; Malnutrition; food security; urban environments; poverty

# **Contact Details**

Postal Address: Children's Institute, University of Cape Town, 46 Sawkins Road, Rondebosch, 7700 Tel: +27 21 689 5404 Fax: +27 21 689 8330/1287 E-mail: info@ci.org.za Web: www.ci.org.za UCT General enquiries: +27 21 650 9111 UCT web: http://www.uct.ac.za

# **PAEDIATRIC ANAESTHESIA**

# Head of Unit: Associate Professor Jenny Thomas

# Unit profile

The Unit of Paediatric Anaesthesia, a division of the Department of Anaesthesia, University of Cape Town and School of child and Adolescent Health, is responsible for the provision of anaesthesia for all children, infants and adolescents undergoing surgery or procedures at the Red Cross War Memorial Children's Hospital and Maitland Cottage Children's Home. This department also provides acute, chronic and palliative care services for the children at this hospital as well as providing input into paediatric intensive care services. The Paediatric Pain Team is a multidisciplinary group of practitioners - some with funded positions, others whom are volunteers which is anaesthesia-directed and nurse driven. These include SRN Angeline Schrikker (nurse practitioner in pain) and a number of other volunteers which include child and family psychotherapists, aroma therapists, music and art therapists. These all work to provide an integrated approach to pain management. Radiotherapy and oncology services are provided at both GSH and RCWMCH when their need arises this should be formalised to provide a more sustainable service.

# **Unit Profile**

### Permanent staff

Head of clinical unit	1
Specialists	7
Registrars	5
Total	13

# **Research fields and staff**

### PROFESSOR JENNY THOMAS

Acute and chronic pain management, palliative care, analgesia and sedation, burns, conjoined twins' anaesthesia, general paediatric surgery, cardiothoracic anaesthesia, perioperative behaviour disorders, and perioperative morbidity and mortality.

### DR GRAEME WILSON

Paediatric pharmacology, total intravenous techniques in children, target-controlled anaesthesia, cardiothoracic anaesthesia.

### DR REBECCA GARY

Transfusion medicine, vascular access, premature infants, ultrasound applications, cardiac, general paediatric surgery, burns and paediatric simulation.

### DR KARMEN KEMP

Cardiac anaesthesia, childhood malignancies, teaching. Dr Kemp is in charge of registrar activities.

### DR KOTIE BESTER

Ultrasound and echocardiography applications in paediatric anaesthesia, modalities for analgesia and sedation, interventional radiology and MRI. Dr Bester also has an interest in perioperative morbidity and mortality.

### **Contact Details**

Paediatric Anaesthesia D Floor Main Hospital, RCWMCH, Klipfontien Road, Rondebosch, 7700, Cape Town, South Africa Telephone: Prof Thomas +27 21 6585466 Ms Williams +27 21 6585183 Emails: Prof Thomas - j.thomas@uct.ac.za Ms Williams - Melissa.williams@uct.ac.za

# PAEDIATRIC DERMATOLOGY

# Head of Unit: Dr Carol Hlela

### Unit profile

Dr Carol Hlela is the Head of Paediatric Dermatology at Red Cross Hospital and managing of Adult inpatients and outpatients with varied skin conditions. She is the division's only consultant that runs the clinical service and is assisted by dermatology registrars from Groote Schuur Hospital for two clinics a week and also two sisters of Red Cross Hospital.

### **Current Studies**

following areas:

She completed conducting a clinical trial at Red Cross entitled: Accessible and Affordable Moisturizers for Atopic Eczema, the 3AM Atopic Eczema Study. The aim of which is to find easily accessible moisturizers with a view to replace the standard of care regime. The intention of which is to empower patients and reduce the dependence on the health sector for moisturisers. She is also currently conducting her own research in the

- 1. Prevalence of HTLV-1 infection amongst blood donors in South Africa. Carol Hlela, Wendy Sykes, Marion Vermeulen, Edward Murphy. A collaborative project with the South African National Blood Services (SANBS).
- Epidemiology of HTLV-1 infection in South Africa, the forgotten epidemic. Carol Hlela, Maia Lesosky, Diane Hardie, Ravi Moodley, Edward Murphy. A project conducted in partnership with the national health services laboratory (NHLS).
- Formulating a National Multicentre Registry of Infective Dermatitis Associated with HTLV-1 (IDH), a collaborative project with the South African Dermatology Society of SA.

### **Student Supervision**

- Filipe Ferreira de Almeida Rego, PhD student – Africa Centre, KwaZulu Natal Project title: Analysis of HTLV-1 integration sites (IS), proviral load and mutations in pX ORF-1 and ORF-II and infective dermatitis associated with HTLV-1 (IDH) development.
- Nomthandazo Ngcobo, MMED student Dermatology Department, KwaZulu Natal Project title: Prevalence of steven-johnson syndrome / transient epidermal necrosis (SJS/TEN) in HIV in South Africa, a literature review.
- 3. Kate Webb, PhD student- Paediatric Rhuematology department, University of Cape Town, Project title: Sweet's syndrome as a possible autoinflammatory disorder in children.

- 4. Nonhlanhla Lunjani: Department of Dermatology. University of Cape Town. Project title: Mechanisms of Eczema and Allergy Development in Xhosa children
- Felix Dube, PhD student-Microbiology Department, University of Cape Town. Project title: Human T-cell lymphotropic virus type 1 (HTLV-1) -associated infective dermatitis (IDH) and the risk of adult T cell leukaemia/lymphoma (ATLL)

### Project collaborations are with:

Prof Mike Levin from the Department of Allergy, University of Cape Town and the Switzerland based group of investigators including Drs. Akdis, Schmid-Grendelmeier and Weibel working on the research project entitled- Mechanisms of the Development of Allergy (SOS-ALL), which will aim to generate novel knowledge on the origin of the epidemic of IgEassociated allergic diseases, particularly mechanisms of initiation of allergy to propose early diagnosis, prevention and targets for therapy.

# PAEDIATRIC NUCLEAR MEDICINE

# Head of Unit: Dr A. Brink

# **Unit profile**

The Paediatric Nuclear Medicine Service is part of the Department of Paediatric and Child Health. It provides the Nuclear Medicine investigations and therapy for all neonates and children being treated in facilities associated with UCT and supports State and Private Health Care facilities in the Western Cape and other provinces which do not have a dedicated Paediatric Nuclear Medicine Service. In addition, staff actively participate in the Division of Nuclear Medicine at Groote Schuur Hospital.

Registrars from a number of institutions spend time at the Children's Hospital as part of their training, as do radiography students from Groote Schuur Hospital. Other activities include participation in International Congresses and the College of Nuclear Physicians.

### **Unit Statistics**

### Permanent and long term contract staff

Senior spe	cialist				1
Part-time Professor	specialist	/	Emeritus	Associate	1
Total					2

### Students

Registrars	1
Total	1

# **Research fields**

Renal scintigraphy, "milk" scans in gastro-intestinal motility disorders, limb perfusion in children with vascular compromise due to infection or burns, PET/ CT applications in children, and brain perfusion scintigraphy.

# **Contact Details**

Postal address: Paediatric Nuclear Medicine, School of Child and Adolescent Health, University of Cape Town, Red Cross War Memorial Children's Hospital, Klipfontein Road, Rondebosch, 7700, Cape Town, South Africa. Tel: +27 21 6585367 Web: http://web.uct.ac.za/depts/ich UCT General enquiries: +27 21 650 9111 UCT web: http://www.uct.ac.za

# **PAEDIATRIC PATHOLOGY**

# Head of Histopathology Unit: Dr K. Pillay

# **Unit profile**

The Unit of Paediatric Pathology is primarily an NHLS laboratory service unit to Red Cross Children's Hospital and provides paediatric and neonatal services to other Western Cape Health Care Institutions. The pathology service functions as an amalgam of three sub units comprising: Anatomical Pathology, Chemical Pathology and Haematology. Undergraduate teaching activities are largely undertaken through equivalent disciplines at Groote Schuur Hospital and the Medical School of the University of Cape Town to medical and physiotherapy students. Postgraduate teaching is undertaken to MPhil (Paediatric Pathology), MMed (in all the pathology disciplines), and MSc and PhD students at UCT. Research activities are related to laboratory aspects of child health and molecular mechanisms underlying paediatric disease. Research also undertaken through collaborative projects with clinical colleagues, mainly in paediatrics and paediatric surgery.

# **Unit Statistics**

### Permanent and long-term contract staff

Т	otal	43
Ν	HLS Staff	40
Se	enior Lecturers	3

### Students

Registrars	3
Total	3

# **Research Fields and Staff**

### DR WILLIE VAN SCHALKWYK

Molecular genetics of paediatric leukaemias and neuroblastomas; paediatric myelodysplastic syndromes; haemophagocytic lymphohistiocytosis.

### DR KOMALA PILLAY

Pathology of skeletal muscle; brain tumours; lymphomas.

Dr George van der Watt Inherited metabolic disorders.

### CONTACT DETAILS

Postal Address: Paediatric Pathology, School of Child and Adolescent Health, University of Cape Town, Red Cross Children's Hospital, Klipfontein Rd, Rondebosch, 7700 Tel: +27 21 658 5209 Fax: +27 21 658 5206 Web: http://web.uct.ac.za/depts/ich/ UCT General enquiries: +27 21 650 9111 UCT web: http://www.uct.ac.za

# **PAEDIATRIC RADIOLOGY**

# Head of Unit: Dr. T. Kilborn

# **Unit profile**

A clinical radiology department providing imaging to all divisions in the School, performing a total of approximately 40,000 examinations per annum. Imaging modalities include plain-film radiography, computed and digital radiography, digital fluoroscopy, ultrasound (including Doppler), computerised tomography (CT), magnetic resonance imaging (MRI), angiography and interventional radiology. The Division conducts a Postgraduate teaching program for three registrars registered for the M.Med (Diagnostic Radiology) at the University of Cape Town on an ongoing rotational basis and for one registrar registered at the University of Stellenbosch. An undergraduate lecture series in paediatric radiology is provided at 5th year level. Training in paediatric sonography is conducted for B.Tech (Ultrasound) students of the Cape Peninsula University of Technology.

In addition, the Division offers an annual Paediatric Radiology Fellowship, providing further training in the discipline for qualified radiologists. Fellows are registered for the University's Postgraduate Diploma in Paediatric Radiology.

# **Unit Statistics**

### Permanent and Long-term Contract Staff

Lecturers	3
Radiographers and Aux. Staff	30
Total	33

### Students

PhD	0
Registrars/Master's	4
Fellow	1
Total	5

# **Research Fields and Staff**

### T. KILBORN

Oncology, Neuro-imaging, HIV and TB, Pulmonary Imaging, Gastrointestinal,

### N. WIESELTHALER

Neuro-imaging; Orthopaedic imaging; Interventional Radiology

### E. BANDERKER

Cardiac and Chest imaging, Orthopaedics, Imaging in Trauma

# **Contact Details**

Postal Address: Paediatric Radiology, School of Child and Adolescent Health, University of Cape Town, Red Cross Children's Hospital, Klipfontein Rd, Rondebosch, 7700 Tel: +27 21 658 5104 Fax: +27 21 658 5101 Web: http://web.uct.ac.za/depts/ich/ UCT General enquiries: +27 21 650 9111 UCT web: http://www.uct.ac.za

# **PAEDIATRIC SURGERY**

# Head of Unit: Prof. A. Numanoglu

# Unit profile

The department functions as a tertiary and quarternery health care centre for paediatric surgery for the University of Cape Town and the Red Cross War Memorial Children's Hospital. The department is a national/ international centre for postgraduate paediatric surgical career development and is accredited with the HPCSA.

An extensive surgical outreach programme is in existence primarily to improve the surgical care of children at secondary and primary health care levels. The division is regarded as a national centre for minimally invasive surgery, surgical skills training, organ transplantation, specialized hepatobiliary surgery, oncology and burn care in children and for the separation of conjoined twins.

Research is being conducted in the department into a wide variety of aspects of paediatric surgical practice including gastrointestinal surgery, minimal invasive surgery, surgical skills training, trauma care and prevention, liver and renal transplantation, renovascular hypertension, burn therapy, pain assessment and management, conjoined twins and common diseases of Africa including tuberculosis and HIV/AIDS.

# **Unit Statistics**

### Permanent and long-term contract staff

Professor	2
Emeritus Professor	3
Adjunct Professor	1
Head of Clinical Unit	1
Senior Lecturers	2
Career Paediatric Surgical Registrars	3
African Fellowship Training Programme	1
Karl Storz Fellowship Programme	1
Research Technologists / Social Worker	2
Administrative staff	2
Total	18

### Students

Master's	4
Undergraduate	168
Total	172

# **Research Fields and Staff**

### PROFESSOR A. NUMANOGLU

Minimal invasive surgery; transplantation; HIV/AIDS and diseases of the gastro-intestinal tract; teaching with technology; web based outreach; neonatal surgery

### S. COX

The child sexual assault 'epidemic'; burns; surgical aspects of necrotising enterocolitis and other childhood general surgical conditions; surgical oncology

### PROFESSOR A.B. VAN AS

Traumatology; child accident prevention; vascular injuries

### PROFESSOR A.J.W. MILLAR

Biliary atresia, choledochal cysts, liver transplantation, renovascular hypertension, non-transplant surgery for short bowel syndrome, oesophageal replacement with colon, hepatoblastoma, bilateral Wilms' tumour, surgical management of intestinal failure

### EMERITUS PROFESSOR H. -RODE

Burn and nutrition research; short bowel syndrome; HIV/AIDS; oncology and trauma.

### ADJUNCT PROFESSOR R.A. BROWN

Gastrointestinal surgery; surgical endoscopy; constipation and gastro-intestinal polyposis.

### DR R. ALBERTYN

Paediatric pain; rehabilitation and HIV/AIDS; web-based education

### J. RAAD

Manometry and gastro-enterology.

# **Contact Details**

Postal Address: Division of Paediatric Surgery, School of Child and Adolescent Health, University of Cape Town, Red Cross War Memorial Children's Hospital, Rondebosch, 7700 Tel: +27 21 658 5012 Fax: +27 21 658 5632 Web: http://www.surgicalskills.co.za' - http://www. scah.uct.ac.za/clinicalservices/surgery.html UCT General enquiries: +27 21 650 9111 UCT web: http://www.uct.ac.za

# **POISONS CENTRE**

# Head of Unit: Dr C. Roberts

# **Unit profile**

The Poisons Information Centre maintains and distributes the AfriTox poisons information database designed to help clinicians in Southern Africa treat poisoned adults and children. All types of potentially toxic substances are included with a particular accent on local South African trade names and natural toxins. The treatment protocols are tailored for the South African situation. AfriTox is used at over 35 treatment centres countrywide and by both the other Poisons Centres, to underpin poisons advice given to health workers and the public. It is also distributed to centres in Botswana, Kenya, Mozambique, Nigeria and Zimbabwe. AfriTox is also used by doctors on smart phones, laptops and PCs.

The Poisons Emergency Telephone line is answered by the staff of the Poisons Information Centre during office hours on weekdays, and after hours in the Emergency Department of the hospital, using the AfriTox database.

The Centre collects data on all children seen at Red Cross Children's Hospital with known or suspected poisoning and on all calls received during working hours on the Poisons Emergency line.

### **Unit Statistics**

### Permanent and Sessional Staff

Medical officers	2
Pharmacists	2
Total	4

# **Research Fields and Staff**

All staff members are involved in data collection

Dr Kate Balme is responsible for case data on poisoning.

# **Contact Details**

Postal Address: Poisons Information Centre, School of Child and Adolescent Health, University of Cape Town, Red Cross Children's Hospital, Klipfontein Rd, Rondebosch, 7700 Tel: +27 21 658 5308 Fax: +27 21 658 5331 Email poisonsinformation@uct.ac.za

# SOUTH AFRICAN TUBERCULOSIS VACCINE INITIATIVE (SATVI)

# Head of Unit: Professor Willem Hanekom

## **Unit profile**

SATVI's vision is "A World Without TB", while our mission is "Innovative And High-Quality TB Vaccine Research In Africa, To Impact The Global Epidemic". To achieve its mission, SATVI has been testing 7 new TB vaccine candidates in 15 completed or ongoing clinical trials. SATVI also addresses other critical clinical, epidemiological, immunological and human genetic questions in TB vaccine development. A large focus of this research is on identification of markers in blood to indicate whether a person is at risk of developing, or protected against, TB disease (correlates or risk or of protection).

SATVI is the largest dedicated TB vaccine research group on the African continent, with an annual budget of ~R70 million. Its success is evident from manuscripts published in high impact journals, funding support from multiple international funding agencies, invited presentations at international conferences and representation on multiple international policy bodies.

SATVI also has an active postgraduate academic training programme, with a total of 13 postdoctoral, doctoral and master's students.

Particular highlights from 2013 included publication of the results of the first efficacy trial of a new TB vaccine, MVA85A, in nearly 50 years. The group was also awarded two new grants to the value of R 37.4m and R 47.7m from the Bill and Melinda Gates Foundation to identify correlates of risk of TB disease.

# **Divisional Statistics**

### **Students and Postdoctoral Fellows**

Master's	2
Doctoral	4
Postdoctoral Fellows	7
Total	13

### Permanent and Contract Staff

Permanent staff	72
Fixed term contract staff	21
Total	93

## Academic and Support Staff

Academic staff	6
PASS staff	87
Total	93

## **Research Fields and Staff**

#### **Research Staff**

#### WILLEM HANEKOM – DIRECTOR

TB vaccine development and testing; Correlates of risk of TB disease in infants, adolescents and adults; Immunopathogenesis of TB and of TB/BCG/IRIS in infants, adolescents and adults.

## MARK HATHERILL – DEPUTY DIRECTOR FOR CLINICAL TRIALS AND EPIDEMIOLOGY

TB vaccine development and testing; Epidemiology and diagnosis of TB in infants, adolescents and adults.

## THOMAS SCRIBA – DEPUTY DIRECTOR FOR IMMUNOLOGY

Immunopathogenesis studies; TB vaccine development and testing; Correlates of risk of TB in infants and adolescents; adolescents and adults; Assay development.

#### HENNIE GELDENHUYS

TB vaccine development and testing, including novel administration of vaccines; Epidemiology and diagnosis of TB in infants, adolescents and adults.

#### ANGELIQUE LUABEYA

TB vaccine development and testing; Epidemiology and diagnosis of TB in infants, adolescents and adults.

#### MICHELE TAMERIS

TB vaccine development and testing; Epidemiology and diagnosis of TB in infants and adolescents; Drama as a vehicle for communicating research technology.

#### ELISA NEMES

TB vaccine development and testing; Correlates of risk of TB disease in infants; Immunopathogenesis of TB and of TB/BCG/IRIS in infants, adolescents and adults.

#### ADAM PENN-NICHOLSON

TB vaccine development and testing; Correlates of risk of TB disease in adolescents; Assay development.

#### EDWARD MAKGOTHLO

Correlates of risk of TB disease in adolescents.

#### SARA SULIMAN

TB vaccine development and testing; Correlates of risk of TB disease in adolescents; Assay development.

#### HELEN MEARNS

Analysis of immune responses to novel vaccine strategies against TB.

#### VIRGINIE ROZOT

TB vaccine development and testing; Correlates of risk of TB disease in infants; Immunopathogenesis of TB and of TB/BCG/IRIS in infants, adolescents and adults.

#### SELECTED RESEARCH GRANTS

SATVI received additional financial support through the following grant awards during 2013:

- Project: Robin Wood (T. Scriba), Tuberculosis Transmission: Host, Bacterium and Environment Funder: MSC SA Grant period: 2013 –2016
- Project: T. Scriba, T cell determinants of risk for TB disease in adolescents Funder: Bill & Melinda Gates Foundation Grant period: 2013 – 2016
- Project: T Scriba, The role of human naivelike memory T cells in natural infection with Mycobacterium tuberculosis Funder: MRC SA Grant Period: 2013 – 2015
- Project: T Scriba, CyTOF Mass Cytometer for T cell correlates of risk of TB disease in adolescents Funder: SA Department of Science and Technology Grant Period: 2013 – 2014
- Project: Z Brey, Riley Method TB Vaccine Research Facility Funder: Bill & Melinda Gates Foundation

Grant Period: 2013 - 2015

- Project: M Hatherill, A phase IIb, double-blind, randomised, placebo controlled study to evaluate the efficacy, safety and immunogenicity of GSK Biologicals' candidate tuberculosis (TB) vaccine GSK 692342 against TB disease, in healthy adults aged 18-50 years, living in a TB endemic region Funder: Aeras / GSK Grant Period: 2013 – 2017
- Project: M Hatherill, A double-blind, randomised controlled Phase IIb trial of safety and immunogenicity of MVA85A given for prevention of recurrent tuberculosis
   Funder: National Institutes of Health (NIH) Grant Period: 2013 – 2014
- Project: M Hatherill, A Randomized, Placebo Controlled, Partially Blinded Phase II Study to Evaluate Safety, Immunogenicity, and Prevention of Infection with Mycobacterium tuberculosis of AERAS-404 and BCG Revaccination in Healthy Adolescents Funder: Aeras Grant Period: 2013 – 2017
- Project: M Hatherill, UCT Clinical Trials Unit SATVI CRS Funder: NIH

Grant Period: 2013 – 2020

- 10. Project: M Tameris, Vaccine Development Registry Funder: Aeras
  - Grant Period: 2013 2015
- Project: M Tameris, A Phase 1b, Randomized, Double-blind, Placebo-controlled, Dose-escalation Study to Evaluate the Safety and Immunogenicity of the ID93 + GLA-SE Vaccine in BCG-Vaccinated Healthy Adults Funder: Aeras

Grant Period: 2013 – 2015

- Project: A Luabeya, A Phase I/IIa Double-Blind, Randomized, Placebo-Controlled, Dose-Finding Study to Evaluate the Safety and Immunogenicity of AERAS-456 in HIV-negative Adults with and without Latent Tuberculosis Infection Funder: Aeras Grant Period: 2013 – 2015
- Project: A Luabeya, Host-Based Assessment of MTB Funder: University of Washington Grant Period: 2013 – 2014

## **Contact Details**

South African Tuberculosis Vaccine Initiative (SATVI) Postal Address: Wernher and Beit Building South, Anzio Road, Observatory 7925 Tel: +27 21 406 6791 Fax: +27 21 406 6693 Web: http://www.satvi.uct.ac.za UCT General enquiries: +27 21 650 9111 UCT web: http://www.uct.ac.za

# DEPARTMENT OF Paediatrics and child Health

## **Research output**

## Authored books

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## **Chapters in books**

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# PRIMARY HEALTH CARE DIRECTORATE

## **Director: Prof Steve Reid**

## **Directorate Profile**

The vision of the Primary Health Care Directorate is a Health Science Faculty that promotes equity and quality in health care, guided by the primary health care approach. The Directorate aims to promote the primary health care approach in teaching, research, policy, health services and community engagement by the Faculty of Health Sciences. Its objectives are to integrate a primary health care approach into the faculty's undergraduate and postgraduate curriculae by means of extending and developing the faculty's clinical teaching platform in rural and primary care sites; deepening community engagement within the health service and the faculty's curriculae; enhancing the recruitment and support of students of rural origin in the faculty; and increasing inter-disciplinary research in health sciences. The mission of the PHC Directorate is to promote equitable, comprehensive, compassionate and quality care at all levels of the health system by means of: the recognition of diversity and culture: evidence-based practice and policy; active health promotion; community-based education; and strategic partnerships.

## **Directorate Statistics**

#### Permanent and long-term contract staff

Professors	1
Senior Lecturers	2
Lecturers	3
Junior Research Officer	1
Health Teaching Platform Manager	1
Site Facilitators	4
NGO Facilitators	2
Site Coordinators	4
Facility Manager	1
Admin Staff	2
Total	21

#### Honorary staff

Honorary Lecturers	2
Honorary Research Associate	1
Total	3

### **Research Fields and Staff**

#### Permanent staff

#### PROF STEVE REID

Director: Primary health care; Collaboration for Health Equity through Education and Research; compulsory community service; family medicine; rural health; district health systems; community based services support & intermediate care policy; community oriented primary care; population based approaches to health; community based education; medical education; human resources for health; global consensus on social accountability; creativity and health; arts and healthcare steve.reid@uct.ac.za

#### MR JAMES IRLAM

Senior Lecturer: Primary health care; evidence-based practice; climate change and health james.irlam@uct.ac.za

#### DR LAURAINE VIVIAN

Senior Lecturer: Primary health care; medical anthropology; culture, psyche and illness; medical education; electromagnetic radiation health implications from cell phone technology lauraine.vivian@uct.ac.za

#### MRS JOHANNAH KEIKELAME

Lecturer: Primary health care; health promotion; community needs assessment; patient and carers perspectives on epilepsy johannah.keikelame@uct.ac.za

#### MRS SARAH CRAWFORD-BROWNE

Lecturer: Primary health care; culture, psyche and illness; psychological trauma; community based mental health programming sarah.crawford-browne@uct.ac.za

## **Contract staff**

#### DR DES MICHAELS

Lecturer: Primary health care; health promotion; integrated clinical practice, Collaboration for Health Equity through Education and Research; social accountability des.michaels@uct.ac.za

#### MRS CLAUDIA NAIDU

Junior Research Officer: Collaboration for Health Equity through Education and Research; social accountability claudia.naidu@uct.ac.za

#### Honorary Lecturers & Honorary Research Associates

#### DR BEN GAUNT

Honorary Lecturer: Primary health care; rural health; district health systems; community based healthcare & development; health systems research; multidisciplinary healthcare; clinical services; medical education & outreach programmes; HIV/AIDS; obstetrics & gynaecology gaunts@gmail.com

DR KARL DU PRE LE ROUX

Honorary Lecturer: Primary health care; rural health; district health systems; community based healthcare & development; medical education & outreach programmes; clinical services; HIV/AIDS; obstetrics & gynaecology; nutrition research karlleroux@gmail.com

#### DR ROB BAUM

Honorary Research Associate: Playwriting; theatre, speech, choreography & dance; movement therapy; inter-disciplinary arts research; African dance ethnography; creative arts rob baum@uct ac za

## Research Highlights

Medicine and the Arts: A new postgraduate Medicine and the Arts course which commenced in 2014 was designed by Prof Reid and Dr Susan Levine, Dept of Social Anthropology. The course contributes to new interdisciplinary research initiatives underway at UCT, and provides an unparalleled opportunity for students from the Health Sciences and Humanities to engage with the production of knowledge of and about the body, from multiple perspectives. The course also provides an intellectual platform for students to explore new possibilities, already activated on the global stage, about the ways in which the arts can constructively engage with medical pedagogy and practice, and to engage in key debates relating to medicine, the arts and medical anthropology.

Promoting Rural Health: A portion of a faculty R1.2m Atlantic Philanthropies 3-year grant dispersed to the PHCD was utilized to encourage the recruitment of health sciences students from rural and underserved areas, support them to develop leadership skills, better prepare medical students for rural practice, and contribute overall to health equity. The PHCD worked at raising the profile of rural health amongst the students and faculty; expose an increasing number of students to rural situations via the subsidy provided for 5th year rural electives; raise awareness amongst rural learners about health careers and processes to be followed to become health professionals in future; and expose students to leadership through workshops and practice whilst leading their student societies.

Interdisciplinary Work: James Irlam brought together a workshop on Trans-disciplinary and Inter-disciplinary (TDID) Research in the faculty, which has the potential for increasing research output. The statistics from around the world show that the output of those universities that have deliberately created an enabling environment for interdisciplinary research, has increased exponentially, as compared to those who continue ploughing the same furrows within their disciplinary boundaries. Although a lot of the work done at the PHCD is interdisciplinary, this is not the case for most departments, and one of our core functions is to initiate and stimulate this kind of thinking within the faculty.

Curriculum Revision: The faculty-led Curriculum Revision Task Team (CRTT) chaired by Prof Reid met for their final meeting in October 2013 to review what has been achieved since the inception of the Task Team in August 2010, evaluate if the major objectives have been served and to bring clarity to the way forward with respect to salient issues that remain a work-in-progress and will be taken up by the MBChB Programme Committee. Initial revisions to the 4th year curriculum would take effect in 2014 including the introduction of primary care Paediatrics, incorporating additional on-site student clinical work, inclusion of alternative off-campus sites, home visits, and integrating PHC themes and learning outcomes across the curriculum. Revisions to the 6th year curriculum would continue to be interrogated with the aim of exploring the implementation of a longitudinal 6th year programme in George or other community-based off-campus sites on the expanded teaching platform, and interrogating workable models. Task Teams would continue to examine graduate attributes in relation to templates that were designed to identify and integrate PHC threads across the major themes of human rights; inter-professional teamwork; communications & cultural competence; evidence based practice; life-long learning; bio-psychosocial approach; ethics; gender & sexuality (LGBT); SHAWCO Health Proposal; and oral health. The curriculum mapping process which was half-way through, would also be completed. The Culture, Psyche and Illness thread of the MBChB was reviewed leading to a clarification of outcomes and strategies.

Visiting Scholars: Prof Stewart Mennin, an expert in curriculum reform from the University of New Mexico, was invited by Prof Reid to run a workshop on "Curriculum Change & Models" at the faculty in September 2013 on the vital subject of curriculum revision, curriculum models and the challenges of curriculum changes pertaining to the MBChB undergraduate early and clinical years. The workshop interrogated the numerous complex issues at play including what rules can be instituted to synergize teachers and learners; how size can be used advantageously; how a teacher delivery model (one speaking to many) can address the fact that size is unlimited and inversely proportional to engagement and meaningful exchange; how basic rules of working together can be better understood and instituted; which curriculum models could work within our context; and how to examine the basic unit of function, which is learning not content. Prof David Hirsch, Assistant Professor of Medicine at Harvard Medical School and Director and co-founder of the Harvard Medical School-Cambridge Integrated Clerkship, was invited to present to the faculty in August 2013 on "The Case for Curricular Integration: What Harvard's Longitudinal Integrated Clerkship teaches about educational design". Prof Hirsch is an expert in the so-called 'Longitudinal Integrated Clerkship' model of teaching, in which clinical students undertake their learning in each discipline over a whole year 'longitudinally' rather than 'vertically' in blocks. The Harvard Medical School Cambridge Integrated Clerkship story has much to say about educational transformation and will be helpful to open ideas about our final year MBChB curriculum revision

Conference Presentations: Prof Reid, Dr Michaels, Claudia Naidu and James Irlam gave oral & poster presentations at the SAAHE 6th National Conference on "The relationship of health science faculties to their health service partners: implications for clinical teaching in SA"; "Peer review for social accountability of health sciences education: a model from SA"; "The home visit: still a feasible teaching tool for medical students? A pilot study for curriculum revision"; "A system that is constantly trying to shape you in a different way - student's perspectives on being a good doctor"; "Career and practice intentions of health science students across three SA medical schools"; "A review of the Wits University medical students' community-based health promotion service learning projects in SA". James Irlam gave oral & poster presentations on "Advocacy for a health energy policy: the experience of a national roundtable process" at the RuDASA 17th Rural Health Conference and the 9th PHASA Conference; "Micronutrient supplementation in children with HIV infection: a Systematic Review for the HIV/AIDS Cochrane Review Group" at the African Cochrane Indaba; and "A cost-effective strategy for primary prevention of acute rheumatic fever and rheumatic heart disease in SA children with pharyngitis" at the UCT SCHAH Research Day. Prof Reid gave oral presentations on "Why we do what we do: the philosophy of rural health" at the RuDASA Conference and "Medicine and humanities in conversation" at the WiSER Body Knowledge Medical Humanities in Africa Conference.

## **Contact Details**

Postal address: Primary Health Care Directorate, Old Main Building, Groote Schuur Hospital, E47-25, Observatory, 7925 Telephone: +27 21 406 6031/6761 Fax: +27 21 448 5653 E-mail: cha.johnston@uct.ac.za Web: www.primaryhealthcare.uct.ac.za

## **Research output**

## **Chapters in books**

Flinkenflogel, M., Mash, B., Ayankogbe, O., Reid, S., Essuman, A. and De Maeseneer, J. 2013. The African family physician: development of family medicine in Africa in the twenty-first century. In M. Kidd (ed), The Contribution of Family Medicine to Improving Health Systems: A guidebook from the World Organization of Family Doctors, 2<sup>nd</sup> edition, pp. 247-265. London: Radcliffe Publishing Ltd. ISBN 9781846195549.

## Articles in peer-reviewed journals

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Moosa, S., Downing, R.V., Mash, B., Reid, S., Pentz, S. and Essuman, A. 2013. Understanding of family medicine in Africa: a qualitative study of leaders' views. British Journal of General Practice, 63(608): 139-140.

Naidu, C., Irlam, J.H. and Diab, N. 2013. Career and practice intentions of health science students across three South African Medical Schools. African Journal of Health Professions Education, 5(2): 68-71.

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# DEPARTMENT OF Psychiatry and Mental Health

## Head of Department: Professor Dan J. Stein

## **Departmental Profile**

The Department of Psychiatry and Mental Health is firmly committed to strengthening the integration between services, teaching, and research. Clinicians in each of the Divisions of the Department (addiction psychiatry, child and adolescent psychiatry, consultationliaison psychiatry, forensic psychiatry, general hospital psychiatry, intellectual disability, psychotherapy, neuropsychiatry, psychopharmacology, and public mental health) are active in research in their particular areas. Thus clinical research in the Department covers key clinical problems that are relevant in the South African context, including behavioural and neuropsychiatric aspects of HIV/AIDS, substance use disorders (including fetal alcohol spectrum disorder), adolescent risk-taking behaviour, posttraumatic stress disorder, and mental health policy and services.

In addition, the Department plays a key role in several cross-departmental and cross-institutional research initiatives:

- The Brain-Behaviour Initiative (BBI) is one of UCT's signature themes. The initial focus of the BBI was on trauma, but it has extended to include neuroHIV and substance use disorders. More details of the aims, methods, and partners, are available at http://www.health.uct.ac.za/research/groupings/ bbi/overview/
- The Adolescent Health Research Unit is examining adolescent risk-taking behaviour, predictors of school dropout, and violence in intimate adolescent relationships. Data analysis is in progress for two large school-based cluster randomised control trials of AIDS prevention.
- The Alan J Flisher Centre for Public Mental Health addresses a range of questions in mental health policy and implementation science, and offers advanced training in public mental health. The Centre currently conducts research in 9 low and middle-income countries in Africa and south Asia, including the Programme for Improving Mental health care (PRIME) (www.prime.uct.ac.za), the Africa Focus on Intervention Research for Mental health (AFFIRM) (www.affirm.uct.ac.za), and Emerging Mental Health systems in low and

middle-income countries (EMERALD) research and capacity building initiatives. Within the Centre, The Perinatal Mental Health Project (PMHP) contributes research on maternal mental health from its own service and training initiatives as well as in collaboration with other partners.

## **Departmental Statistics**

## Permanent and long-term contract staff

Professors	3
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Emeritus Professors	5
Associate Professors	4
Senior Lecturers	41
Lecturers	15
Research Staff	35
Administrative and Clerical Staff	5
Total	96

## **Honorary Staff**

Lecturers	11
Senior Lecturers	3
Professors	14
Total	17

## Students

Postdoctoral / Clinical Research Fellows	8
Doctoral	14
Master's	34
Total	58

## **Research Fields and Staff**

## ADDICTION PSYCHIATRY

Substance use and anxiety disorders (Don Wilson); Interventions (Katherine Sorsdahl, Sonja Pasche)

#### CHILD AND ADOLESCENT PSYCHIATRY

Adolescent risk behaviour (Cathy Mathews), infant mental health (Astrid Berg), , autism and pervasive development disorders (Petrus de Vries).

### CONSULTATION-LIAISON PSYCHIATRY

Women's mental health, stress and pregnancy (Bavanisha Vythilingum), liaison psychiatry and HIV (Jackie Hoare and Kerry Louw), pain (Louise Frenkel)

#### FORENSIC PSYCHIATRY

Mentally ill offenders and femicide (Sean Kaliski and Tania Swart).

### GENERAL PSYCHIATRY

mHealth interventions (Pete Milligan), bipolar disorder (Neil Horn), substance-induced psychosis ( (Henk Temmingh), clinical audit (Robin Allen).

#### INTELLECTUAL DISABILITY

Fetal alcohol spectrum disorder (FASD) neurobehaviour and brain imaging (Colleen Adnams)

#### PSYCHOTHERAPY

Intimate partner violence (Adele Marais), Recovery in serious mental illness (Sharon Kleintjes)

#### NEUROPSYCHIATRY

Neurocognitive disorders and neuropsychiatry of HIV, brain imaging and HIV (John Joska; Carla Freeman), ARV initiation and adherence (John Joska and Hetta Gouse)

#### PSYCHOPHARMACOLOGY

Pharmacological MRI, Evidence-based psychopharmacology (Dan Stein, Taryn Amos)

#### PUBLIC MENTAL HEALTH

Mental health policy and services (Crick Lund), Green psychiatry (John Parker)

#### **Contact Details**

Postal Address: UCT Department of Psychiatry and Mental Health, Groote Schuur Hospital, Observatory, Cape Town, 7925 Tel: +27 21 404 2174 or +27 21 4066566 Fax: +27 21 448 8158 Web: http://web.uct.ac.za/depts/psychiatry/ UCT General enquiries: +27 21 650 9111 UCT web: http://www.uct.ac.za

#### **Research highlights from 2013**

- Awarding of the Emerging Mental Health systems in low and middle-income countries (EMERALD) EU-FP7 grant (€6,000,000). The grant is being led by Prof Graham Thornicroft at the Institute of Psychiatry, King's College London, and the UCT CPMH is leading Work Package 3 of the grant, together with Dr Dan Chisholm at the World Health Organization, Geneva.
- Publication of a "flagship" paper for PRIME in PLoS Medicine (December 2012).

## **Research output**

#### Articles in peer-reviewed journals

Abbo, C., Kinyanda, E., Kizza, R.B., Levin, J., Ndyanabangi, S. and Stein, D.J. 2013. Prevalence, comorbidity and predictors of anxiety disorders in children and adolescents in rural north-eastern Uganda. Child and Adolescent Psychiatry and Mental Health, 7(21): 1-11. Akena, D., Joska, J., Obuku, E.A. and Stein, D.J. 2013. Sensitivity and specificity of clinician administered screening instruments in detecting depression among HIV-positive individuals in Uganda. Aids Care, 25(10): 1245-1252.

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Atwoli, L., Stein, D.J., Williams, D.R., McLaughlin, K.A., Petukhova, M., Kessler, R.C. and Koenen, K.C. 2013. Trauma and posttraumatic stress disorder in South Africa: analysis from the South African stress and health study. BMC Psychiatry, 13: 182.

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Boyes, M. and Cluver, L. 2013. Performance of the revised children's manifest anxiety scale in a sample of children and adolescents from poor urban communities in Cape Town. European Journal of Psychological Assessment, 29(2): 113-120.

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# SCHOOL OF PUBLIC Health and family Medicine

## Director: Professor Mohamed F Jeebhay

## **School Profile**

The School of Public Health and Family Medicine is a strong multidisciplinary department in the Faculty of Health Sciences. Its teaching, research and service extend to a wide range of settings and content areas consistent with the evolving disciplines of Public Health and Family Medicine.

The School is currently organised into 8 disciplinary teaching and training divisions and 4 URC accredited research units. Three of these divisions, Public Health Medicine, Occupational Medicine and Family Medicine have a clinical service responsibility through joint appointments with Western Cape Government Department of Health (Directorate of Health Impact Assessment, Groote Schuur Hospital Occupational Medicine Clinic, Chief Directorate Metro District Health Services) respectively.

## Teaching

The School runs a large postgraduate programme, including 7 postgraduate diplomas, 6 Master's programmes, 3 professional Master's programmes and a PhD programme. In 2013, there were 364 postgraduate students in the School including 29 PhD students. A total of 102 postgraduate students graduated in 2013, including 5 PhDs, 41 Master's and 56 postgraduate diploma students (one third of all faculty diplomas awarded). The Master's in Public Health (MPH) is the School's flagship public health programme and the largest taught master's in the Faculty, with 200 students having graduated over the past decade.

The MPH continues to attract widespread interest from potential applicants, particularly from other African countries. There were 226 applicants for 50 places, of which 52 were accepted and took up places for study in 2013. A record number of 30 students (from 26 in 2012) graduated during 2013 out of a total registration of 156 students pursuing this 3 year degree. With appropriate resourcing, there is scope for an increased intake and increased throughput on this flagship programme. As the only Master's programme in palliative medicine in Africa, the MPhil in Palliative Medicine continues to attract students from South Africa and other countries in Africa. The School is also playing an increasing role in the new undergraduate medical curriculum with the aim of producing medical professionals able to function effectively at the primary care level and imbued with an understanding of public health. Public Health and Health Promotion training to undergraduates take place in community-based settings and has been instrumental in pioneering community-placements for MBChB students at UCT. A number of initiatives are underway to develop off-campus teaching sites linked to Community Health Centres and district hospitals. The Family Medicine division has been closely involved in developing and supporting the rural teaching venue in Vrendenburg.

## **Research – overview**

There are four URC-accredited research entities within the School: Centre for Infectious Disease Epidemiology & Research (CIDER), Centre for Occupational and Environmental Health Research (COEHR), Health Economics Unit (HEU) and the Women's Health Research Unit (WHRU). Research outputs in 2013 included approximately 185 peer-reviewed journal publications (a 3% increase from 2012) and 12 book chapters. Total research grant and contract income to the School was R46 882 032 in 2013, a 20% increase from 2012 research income.

Furthermore, in addition to subsidy-attracting publications, academic staff participate in a range of provincial, national and international policy and produce a number of technical and policy papers. These contributions do not always find their way into peer-reviewed scientific journals, but which are integral to the department's service mission, reflecting the School's strong social responsiveness profile in applying research and scholarly activity as part of advocacy to promote the public's health.

The School's research mission is reflected in the wide range of research activities and the associated research outputs are notable for their multidisciplinary perspective. In infectious diseases and women's health, publications cover childhood and adult tuberculosis prevention, diagnosis and treatment; HIV epidemiology, transmission and treatment (including treatment outcomes, adherence and mortality); adolescent risk-taking behaviour and educational interventions; prevention of mother-to-child transmission of HIV infection; contraceptive services and women's reproductive health more broadly; economic analyses of tuberculosis and HIV services; HPV vaccination and cervical cancer prevention and health systems aspects of care related to TB and HIV. The integration of human rights considerations into public health policy and health systems practice receives attention in a number of publications. The department continues its role as a national leader in occupational and environmental health research with investigations into occupational allergy, pesticides, hazardous metals and lung disease due to mineral dust. Finally, the question of equity of resource allocation in health, and particularly in primary health care, continues to occupy researchers in health economics, who remain the leading South African source of peer-reviewed publications in this field.

The School has eight NRF-rated researchers, including Dr Chris Colvin (Promising Young Researcher), A/ Prof Aqiel Dalvie (Established Researcher), Dr Richard Matzopolous (Established Researcher), Professor Jonny Myers (Internationally Acclaimed Researcher), Professor Lucy Gilson (Internationally Acclaimed Researcher), Professor Mohamed Jeebhay (Internationally Acclaimed Researcher), Professor Leslie London (Internationally Acclaimed Researcher) and Professor Di McIntyre (Internationally Acclaimed Researcher).

In 2013, Dr Mary-Ann Davies in CIDER received the Bronte Stewart Memorial Research Award for the best PhD in the Faculty. The School also made its third award of the David Bourne prize for the best student in the MPH programme to Monika Kamkuemah. The prize commemorates David Bourne, a demographer in the School who died in 2009, and whose death left a huge gap in the HIV research world. Keren Middelkoop was awarded the Ethne Jacka prize for the top MPH dissertation by a graduating candidate in 2012. John Ataguba received the Young Investigator Award for the best publication in the Faculty (2012) as well as the Claude Leon Merit Award for Young Lecturers. Two staff members, Associate Professor Landon Myer and Dr Chris Colvin, were among the recipients of the Top Soft-Funded Academic and Research Staff (SFARS) Awards in the Faculty.

## Centre for Occupational and Environmental Health Research (COEHR)

The Centre's aim is to be a principal centre of OEH research, teaching and training, occupational medical clinical services, policy advisory, technical consultancy services, advocacy and a source of supportive outreach activities in South Africa, in the Southern and Eastern regions of Africa, Africa more generally, and internationally.

The major objectives of the Centre are firstly, to conduct multidisciplinary research, teaching and service provision of high priority in Southern Africa, integrating laboratory, clinical, epidemiological and policy skills. Another key objective is to explore and develop means of maintaining the health of workers and environmentally exposed communities. A third objective is to conduct policy research into issues ranging from toxic or injurious exposures through to health surveillance. Fostering inter-institutional research, teaching and service (including outreach) collaboration and capacity development constitutes another major objective. Finally, another aim is to foster local and global networks for occupational and environmental health promotion through collaboration with United Nations and other agencies.

## **Key research projects**

Key research areas for the Centre currently include the identification of risk factors and evaluating preventive approaches for allergens and asthma in the workplace, health hazards of chemicals (such as pesticides and endocrine disruptors) and silicosis elimination in gold miners.

Workforces that are of particular relevance for the Centre's work include health care workers, with a specific focus on studying the determinants of TB infection and diagnostic approaches in order to prevent the spread of TB related to the HIV epidemic. Other vulnerable groups include agricultural workers (for whom injuries and pesticide-related asthma and neurotoxicity are a problem) and mine workers (at high risk of developing pneumoconioses and TB).

Environmental risks for workers and communities exposed to metals, such as manganese and arsenic, and other chemicals in the working and residential environments are assessed and monitored. Climate change and its impact on occupational and general health has become a focus linked to the UCT African Climate and Development Initiative.

These areas are supplemented by a broader focus on research to address occupational and environmental health systems and worker's compensation, to promote ethical issues in occupational health practice as well as developing programmes to build OHS capacity through research and training in the SADC region, through the Fogarty International Centre Millenium Promise Programme (MPP) for non-communicable chronic lung diseases.

The Centre commenced a project analysing the approximately 9 million records of mining contracts over the last 40 years from an anonymised database provided by the main recruiting company in the South African mining industry. The study has a number of objectives, viz. to map the changing distribution of recruitment, particularly from gold mines, to estimate actuarially mortality rates and the number of living miners, and to project the number of living miners with silicosis, tuberculosis and HIV infection. The ultimate goal is to inform activities directed at silicosis elimination, control of tuberculosis and the just compensation of miners with occupational lung disease on the subcontinent. The work of the Centre led by Prof Jonny Myers has played a major role in contributing towards a safer occupational exposure limit for manganese exposed workers through its contribution to the American Conference for Government Industrial Hygienists Threshold Limit Values (TLV).

Roslynn Baatjies doctoral study on baker's allergy and asthma demonstrated the substantial positive impact of targeted interventions in reducing flour dust allergens in bakeries, thereby contributing towards preventative strategies for protecting baker's lung health. The findings will be used recommendations to the Department of Labour to revise the current flour dust exposure standard in South Africa, bringing it in line with international best practice.

The Centre received two grants from the International Development Research Centre to evaluate the effectiveness of upstream interventions including urban upgrading and alcohol trading restrictions in reducing violence in selected low-income community in the Western Cape with high rates of violence. Violence Prevention through Urban Upgrading (VPUU) are the primary implementation partners and key proponents of participatory approaches to community development.

The Health Risk Management Programme (HRMP) has begun to conduct research in the area of climate change and climate variability impacts on health and chemical exposure risks. Research in 2013 continued to also focus on the silent public and environmental health problem of informal vendors selling agricultural pesticides for domestic use in low-socio economic communities of street pesticides and child poisonings; occupational herbicide exposures of community workers removing alien vegetation in the Working for Water programme; and developing health interventions for low literate populations. These research projects involved engagement with NGOs, community leaders/members, national, provincial and municipal government departments (health, agriculture and environment) and research institutions (i.e., MRC, CSIR). Capacity building has also included dissemination of research findings to decision makers and lay populations. Mechanisms for capacity building by the HRMP are through a Post Graduate Diploma in Pesticide Risk Management (DPRM) targeted at regulators and inspectors; information dissemination through UCT's pesticide electronic list servers, a bi-monthly online chat discussion forum - virtual seminar - for students and global experts in the field of pesticides and health. The HRMP also develops a range of risk communication materials and health interventions, algorithm, and policy briefs based on research findings. These mediums are used in order to disseminate and translate research findings for a broad range of stakeholders and continue to be widely distributed in printed form and as Creative Commons licensed electronic material posted on UCTs OpenContent UCT site. The programme also conducts policy analysis and inputs to national, regional and international policies on chemical risk management and environmental health.

## Major highlights for 2013 included the following:

- The Centre successfully underwent the 5 year URC Quality Assurance review, which commended the work of the Centre as being highly productive, generating high quality output with an international reputation.
- The Centre hosted the 12<sup>th</sup> International Symposium of Neurobehavioural Methods and Effects in Occupational and Environmental Health in Cape Town in March 2013 under the auspices of the Scientific Committee for Neurotoxicology and Psychophysiology of the International Congress on Occupational Health (ICOH). The conference was co-chaired by Emeritus Professor Jonny Myers and Professor Leslie London, who have been asked to co-guest edit a special edition of Neurotoxicology for papers presented at the Symposium. Associate Professors Aqiel Dalvie and Andrea were members of the Scientific Organizing Committee.
- Professor London was also appointed guest editor for a special edition of the journal New Solutions to focus on the Extractive Industries.
- Professor Leslie London was also awarded a Fulbright Senior Research Fellowship to spend a sabbatical in the Department of Environmental Health at Boston University School of Public Health in the latter part of 2013.
- Professor Rodney Ehrlich spent three weeks at the Yale University Law School and School of Public Health as a Gruber Fellow in Global Health and Justice. One of the outcomes was a postgraduate student project entitled "Fulfilling Broken Promises. Reforming the Century-Old Compensation System for Occupational Lung Disease in the South African Mining Sector".
- Professor Ehrlich was confirmed as Head of the newly formed Division of Occupational Medicine in the School and Prof Jeebhay as Head of the Occupational and Environmental Health Division.
- Associate Professor Hanna-Andrea Rother was promoted ad hominem to Associate Professor. She was appointed Deputy Director of the Centre for the period of 2013-2015.
- Associate Professor Rother chaired a UN advisory group's 7th FAO/WHO Joint Meeting on Pesticide Management of which she is a WHO nominated panel member.
- A/Prof Rother is a member of the Scientific Organizing Committee for the 2014 World Universities Network Conference on Climate

Change and Public Health. She also convened a Satellite Session on Climate Change and Health.

- A/Prof Rother also serves as a member of UNEPs Expert Group on the Development of Legal and Institutional Infrastructures and Cost Recovery Measures for Sound Management of Chemicals. She was also promoted to Associate Professor.
- Prof Jeebhay was presented with the Collegium Ramazzini medal by the Mayor of Carpi in Italy on being elected as a new fellow of the Collegium Ramazzini.
- Prof Jeebhay was invited to two technical taskforces of the European Academy of Allergy and Clinical Immunology (EAACI) Occupational Allergy section to develop consensus guidelines in relation to occupational allergy and asthma viz. MOCEA (measurement of airborne allergens) taskforce and Occupational Anaphylaxis taskforce.
- Roslynn Baatjies was awarded her PhD for her work on occupational allergy and asthma among bakery workers.
- Professor Jeebhay was invited to do a presentation on diagnosis of occupational asthma at the\_XXXII Congress of the European Academy of Allergy and Clinical Immunology and World Allergy Congress held in Milan, Italy, June 2013.

#### Industrial Health Resource Group (IHRG)

Within the COEHR, the Industrial Health Resource Group (IHRG) operates as an action research and socially responsive development group, providing occupational health and safety research, curriculum development, training, advice, and resource development services for trade unions and their members. The work of IHRG is guided by a vision of building the capacity of trade unions and their members to independently monitor, enforce, defend and advance the health and safety rights of workers.

IHRG does representation, investigative and advocacy work for workers and trade unions in relation to workplace health and safety incidents and cases of workrelated injury and disease. IHRG assisted with 83 cases of occupational injury and disease during 2013, involving 51 men, 29 women and 3 workplaces. Cases came from a variety of workplaces and sectors including the breweries, clothing, furniture making, engineering, education, farming, municipalities, security, transport, retail, public health, mining and asbestos manufacturing. In March the Western Cape High Court ruled in favour of a worker (and against the Director General of the Department of Labour) who claimed that he had contracted Hepatitis B as a result of an occupational exposure whilst working in the plumbing of a naval vessel. This court action was the result of a collaboration between IHRG and the trade union Solidarity. In December 2013 lawyers filed an application in the High Court to contest the Department of Labour's refusal to provide the families of workers killed in the 2009 Paarl Print fire access to the DoL Section 32 Formal Enquiry report. Numsa is acting as financial guarantor should IHRG lose the case and be ordered to pay costs. This legal action follows IHRG's unsuccessful efforts to secure access to the report from the DoL under the Promotion of Access to Information Act.

In the course of 2013 IHRG ran a series of workshops for shop stewards and trade unionists on occupational injury and disease case management. This training seeks to develop capacity amongst union organisers and workplace representatives to investigate incidents in the workplace, manage compensation claims, and represent workers in incapacity dismissal cases. Alongside this training activity, IHRG published a revised version of its handbook on COIDA and Case Management. The publication is being piloted in training courses and has been circulated for comment to a reference group that includes representatives from COSATU, NUM, NUMSA, SAMWU and Solidarity, occupational medicine specialists from the University of Cape Town, as well as Dr. Sophia Kisting, former Director of the ILO HIV/ AIDS Program.

IHRG also plays an advocacy role within a national, regional and global context of deregulation, outsourcing and casualisation of labour - trends which enable public and private sector employers to shed responsibility for workplace health and safety. In this regard, IHRG is collaborating with the Federatie Nederlandse Vakbeweging and its South African partners in a campaign for decent work that is directed particularly at vulnerable workers. Our current work with vulnerable workers includes: Nine workshops in collaboration with Naledi and Satawu during 2013 with shop stewards from contract cleaning, security and aviation companies at OR Tambo International Airport; weekly meetings with a group of 20 Community Health Care Workers in Delft; and health and safety workshops with farmworkers organised by Sikhula Sonke.

In November 2013 IHRG convened an indaba for 27 shop stewards and organisers from Numsa who have been participating in a three year *Strengthening Workers Rights* programme funded by the German union confederation, DGB-BW. The purpose of the programme is to build the capacity of the shop stewards to engage with German multi-national companies in the negotiation of workplace level agreements. The participants on the programme represent workers at 11 German multinational companies in the Eastern Cape, Gauteng, Mpumalanga and Kwazulu-Natal. During 2013 IHRG, Samwu and DGB-BW negotiated an agreement for a health and safety training and organisational development programme for the period 2014 to 2016.

IHRG provided health and safety training workshops in response to requests from Nehawu and Chevron petrochemical refinery.

IHRG collaborates locally, nationally, regionally and globally with other labour service organisations, nongovernmental organisations, adult educationists, occupational health experts, various academic programmes, and health research institutions. During 2013, IHRG collaborated with - amongst others –Federatie Nederlandse Beweging, Deutscher Gewerkschaftsbund, Naledi, Ditsela, Workers World Media Productions, Legal Resources Centre, Labour and Enterprise Policy Research Group and the Department of Occupational and Environmental Health at UKZN. In August 2013 IHRG programmes underwent an external evaluation by FNV and by DGB-BW.

Research activity of IHRG contributes towards the production and distribution of a variety of popular and accessible resources (including posters, newsletters, research reports, workshop materials, and handbooks) for trade unions and their members on issues of occupational health and safety. During 2013 IHRG produced a guide for shop stewards on compensation COIDA and Case Management, a housing audit tool for farmworkers, Afrikaans translations of eight health and safety training modules, an article on the class action lawsuit for gold mine workers with silicosis, a DVD about three contract workers injured in a fire at the Engen refinery in Cape Town and another DVD on the working conditions of Community Health Care Workers in Delft, Cape Town. IHRG further developed its website www.ihrg@org.za by setting up a mobi version for cellphone access and establishing a discussion forum on compensation.

## Centre for Infectious Disease Epidemiology and Research (CIDER)

The Centre for Infectious Disease Epidemiology and Research (CIDER) is a multi-disciplinary research group with the following objectives:

- To conduct public health research integrating laboratory, clinical, epidemiological, social science and health systems research into infectious diseases that have high priority in Southern Africa (in particular HIV, tuberculosis and sexually transmitted infections) in order to improve the prevention and management of these diseases.
- To be a service-led research entity, maintaining very strong links with health services at all levels, and to assist policy makers, programme and services managers with the implementation of the results of research.
- To be a centre of expertise in the surveillance and monitoring of infectious diseases and infectious

disease programmes and services, and in the conduct of robust observational research based on routine data sources.

• To provide postgraduate teaching and supervision in epidemiology.

The Centre has a strong track record in researching strategies for HIV prevention. Historically the Centre ran field sites for two large multicentre HIV prevention trials, one for a candidate vaginal microbicide, and the other testing the efficacy of twice daily acyclovir suppressive therapy in preventing HIV transmission among heterosexual HIV-discordant couples in which the HIV-infected partner is Herpes Simplex Virus-2 seropositive. Furthering the focus on HIV prevention the Centre is developing tools and indicators for measuring and evaluating PMTCT programmes in resource limited settings, and is testing novel service strategies for further improving the effectiveness of PMTCT interventions.

A further focus of the work of the Centre is in the area of treatment and service delivery for HIV and tuberculosis. This encompasses an expanding portfolio of health systems research as well as the clinical epidemiology of treatment interventions in individual cohorts. Health system projects have focussed on the use of lay health workers and community-based care, and the integration of TB and HIV services in the Western Cape, Free State and Gauteng. A major strength of the Centre is cohort studies of patients receiving antiretroviral therapy. This includes work with individual cohorts in Khayelitsha and Gugulethu, through to running an NIH-funded data centre for collaborative cohort research combining data from 14 cohorts in South Africa.

The Centre has an excellent working relationship with the Provincial Department of Health, with staff supporting the conduct and analysis of the annual antenatal HIV seroprevalence survey, the development and maintenance of information systems to monitor HIV programmes, and assistance with infectious disease surveillance and outbreak investigations. The work on context-appropriate information systems for HIV programmes has led to further collaborations nationally, regionally and with the World Health Organization.

The Centre has a strong multidisciplinary team of PhD scientists and continues to be a significant resource for epidemiology, biostatistics, infectious disease modelling and qualitative research support within the Faculty. There are active collaborations with a range of clinical and laboratory departments, including with the Departments of Psychiatry and Mental Health, Virology, Obstetrics and Gynaecology, Child and Adolescent Health, and Medicine.

## The major highlights for 2013 include:

A number of staff were promoted during the year or took on new senior appointments

- Associate Professor Landon Myer was appointed as the head of the new Division of Epidemiology and Biostatistics and as Deputy Director of CIDER
- Dr Chris Colvin was appointed as the head of the new Division of Social and Behavioural Sciences
- Dr Kathryn Stinson was promoted ad hominem to Senior Research Officer

## CIDER was successful with the following new grants

- 2 NIH supplements were awarded to the International Epidemiologic Databases to Evaluate AIDS (IeDEA) grant – one to the transfer of children on HIV treatment and one on the impact of HIV treatment (Davies) on adult mortality in South Africa (Johnson).
- Dr Mary-Ann Davies led a successful global consortium that was awarded a grant from the International AIDS Society to develop a global paediatric HIV treatment cohort collaboration (CIPHER
- Collaborative Initiative for Paediatric HIV Education and Research)
- Dr Chris Colvin was awarded an NIH training grant in HIV Social Sciences together with colleagues at Brown University

## The following staff were successful with their post-graduate studies:

- Master's Degrees: Phuelele Trasada, Monika Kamkuemah, Leatitia Kampiire (MPH); Lucy Campbell (MSc Statistics)
- Dr Mary-Ann Davies was awarded her PhD, and was awarded the Bronte Stewart Memorial Research Award for the best PhD in the Faculty of Health Sciences.
- Dr Lele Rangaka, awarded her PhD in 2012 by the London School of Hygiene and Tropical Medicine, was awarded in 2013 the Woodruff medal for the PhD most likely to impact health in developing countries.

CIDER had another productive year in terms of publication output, with staff being authors on over 80 peer reviewed articles, many in leading general medical journals and lead by CIDER staff.

## **Health Economics Unit**

The Health Economics Unit (HEU) conducts research in health economics and health system issues. The

HEU maintains a balance between conceptual and applied research as well as between topics of local and international relevance and focuses on three thematic areas of research, namely health systems and health equity research; health financing and the economic evaluation of disease-priority areas.

There are currently a number of projects relating to issues of health financing and the achievement of universal coverage. In addition to this research work, the HEU is active in knowledge translation through the provision of input into the Ministerial Advisory Committee on National Health Insurance and its various sub-committees in South Africa. Other key policy work includes participation in the Economics and Financing Group for the government's new "National Strategic Plan for HIV and AIDS, STIs and TB" and the provision of scientific advice to the World Health Organisation to look at health economics issues related to vaccines in low- and middle-income countries.

A five-year research project (UNITAS – Universal coverage in Tanzania and South Africa: Monitoring and evaluating progress) continued in 2013. The UNITAS project focuses on monitoring and evaluating policy formulation and implementation processes aimed at achieving universal health coverage in South Africa and Tanzania. The project undertakes monitoring mainly at the district level, with some monitoring and evaluation at the national level. It aims to support implementation processes and will establish an 'early warning system' of implementation difficulties. It is a collaborative, EU-funded project with 2 other South African institutions, a Tanzanian institution and 2 European institutions.

The Global Network for Health Equity (GHNE) continued in 2013 and will enable comparative and collaborative work across three continents to advance equitable universal health coverage. It draws on 3 existing networks: EQUITAP (Equity in Asia-Pacific Health systems, an Asia-Pacific Research Partnership); LANET (The Latin American and Caribbean Research Network on Financial Protection and Health Observatory); SHIELD (Strategies for Health Insurance for Equity in Less Developed Countries, an African network that the HEU co-ordinates). It is funded by the IDRC.

The DST/National Research Foundation South African Research Chairholder in Health and Wealth focuses on the inter-play of health and wealth in the South African context and the impact of a range of government policies on health. Researchers contextualised the social determinants of health within an African context to increase awareness about this issue and to take into account health equity issues to address the root causes of socioeconomic health inequalities. In 2013, the HEU started compiling existing global and domestic evidence on social determinants of health (broadly defined) both at disease specific level and for health in general. Specific disease conditions that we are exploring at the moment include malnutrition in children, obesity, diabetes, hypertension and mental health. Based on this synthesised evidence and the broad WHO framework for SDH, the HEU is developing a conceptual framework for more fully understanding the causal pathways and mechanisms through which SDH operate within the South African context. The ultimate goal is to inform domestic policy actions that can address key social determinants (e.g. through macro-economic and social policies) and improve population health status. Another key area of research relates to providing a strong evidence base to contribute to current policy debates on health care financing reform.

The XTEND and XPHACTOR studies continued in 2013. The XTEND evaluates the impact and cost-effectiveness of Xpert MTB/RIF in the investigation of TB, and its impact on patient and programme outcomes and transmission at a population level, and thus informs policy on the scale up of Xpert MTB/RIF in low- and middle-income countries. The XPHACTOR project focuses on the Xpert MTB/RIF for people attending HIV clinics. It will identify an evidence-based algorithm, which is feasible to implement within HIV clinics, to guide the utilisation of TB investigations. The results will complement the XTEND study, and provide evidence to guide the rational use of Xpert MTB/RIF in national rollout in South Africa and other settings where HIV and TB are both prevalent. The projects run until end of 2014, and the HEU is partnering with the London School of Hygiene and Tropical Medicine, the Aurum Institute, the World Health Organisation, and the National Health Laboratory Services. The Gates Foundation is funding this project.

The HEU also worked on a number of short-term research projects in 2013. A cost analysis of a decentralized drugresistant TB management model developed by Medicines Sans Frontieres was conducted in partnership with the City of Cape Town and the Provincial Government of the Western Cape. Another study that was initiated and completed in 2013 explored the cost-effectiveness of adding the MVA85A vaccine to the BCG vaccine in children from the perspective of the South African government. The recently published results of the Phase IIb clinical trial conducted in Worcester, South Africa, showed the efficacy of the MVA85A vaccine in preventing TB in infants to be 17.3%. Therefore, the vaccine can be considered ineffective. This has a noticeable effect on the outcomes of the cost-effectiveness analysis. However, a Markov model that we developed for this vaccine could also be used to determine the cost-effectiveness of other new TB vaccines being tested in infants. In addition, the model could, potentially, be adapted to reflect the different populations that the efficacy of MVA85A continues to be tested in (e.g. HIV-positive adults). Another study, called

Safe Generations, which explores the cost-effectiveness of Option B+ approach to antiretroviral therapy for HIV positive pregnant women in Swaziland was initiated in 2013. Lastly, an implementing and scaling up a community health policy in Kenya project focuses on community health policy in Kenya; the HEU is working with Japanese Aid and the Kenyan Ministry of Health to analyse issues related to implementing a health promotion programme with Community Health Workers. The project will run until the end of January 2014.

Resilient and Responsive Health Systems (RESYST) is a consortium that is undertaking health policy and systems research (with a focus on financing, health workers and governance) in a set of African and Asian settings, including India, Kenya, Nigeria, South Africa, Thailand, Tanzania and Vietnam. Funded by DfID, the consortium began in 2011 and will run until 2016.

Coordination work for EQUINET (Regional Network for Equity in Health in East and Southern Africa) continued in 2013 around equitable financing of health systems and equitable allocation of health care resources in a range of East and Southern African countries.

During this year, Dr John Ataguba was promoted to Senior Lecturer.

## Women's Health Research Unit (WHRU)

The WHRU enjoys local, national and international research standing especially in the areas of sexual and reproductive health and gender issues. The Unit is involved in research, teaching, technical health service support, and advocacy in the area of women's health. It is made up of a multidisciplinary team of researchers with expertise in public health, epidemiology, sociology and anthropology. The Unit's focus on women's health and on gender and health is aligned with local and global challenges in addressing the health needs of women.

The Unit's research focus can be summarised into three thematic areas: Socio- behavioural research; health services operational research and quantitative/ epidemiological research.

## The major highlights for 2013 include:

- A wide range of research collaborators and other visitors visited the Unit and included, Dr Grossman and Kelly Blanchard from Ibis Reproductive Health, USA, Yi-Ling Tan from Gynuity Health Projects and Mary Fjerstad Director of Woman Health Global.
- The Unit also continued to host a study abroad programme from New York University in collaboration with Professor Sally Guttmacher,

Professor of Public Health and Director of Master's in Public Health Program in Community Health, New York University

- Unit members received numerous awards and honours with Dr Jane Harries, the director of the Unit, being promoted Ad hominem to Associate Professor in the School of Public Health and Family Medicine
- Associate Professor Jennifer Moodley was appointed as a member of the Ministerial Advisory Committee on Cancer Prevention and Control and was also appointed as Director of Cancer Research in the Faulty of Health Sciences, UCT.
- The Unit continued with its interdisciplinary and translational research collaborations in Africa and hosted the Africa Knowledge workshop supported by the UCT Research Office with collaborators from the University of Namibia, University of Lesotho, Eduardo Mondlane University, Mozambique and University of Botswana.
- The Unit co-hosted and taught on the Men Engage Africa Training course with Sonke Gender Justice and on the Stanford University Bing Overseas Study Program: Public and Community Health in Sub-Saharan Africa.
- Unit members continue to attend and disseminate research at invited International Meetings including at WHO Headquarters Geneva, University of California San Francisco, 2nd International Congress on Women's Health and Unsafe Abortion, Bangkok and AIDS impact Conference in Barcelona.
- Associate Professor Diane Cooper was an invited expert member of a Harvard University-USAID Maternal Health and HIV task team developing a global research agenda for priorities in HIV/AIDS and maternal health in African countries.

## **Health Policy and Systems Division**

The *Health Policy and Systems Programme* in the HPS Division encompasses a range of activities aiming to build this area of work through research, teaching, and networking within and outside the SOPHFM. The particular focus of our work is health policy analysis and health systems research.

In 2013, work continued under the umbrella of the *Consortium for Health Policy and Systems Analysis* (CHEPSAA) an 11-partner consortium funded by the European Commission (see www.hpsa-africa.org). This work built on the initial assets and needs assessment of

health policy and systems research in UCT and South Africa – for example, by developing teaching curriculae for relevant courses, and supporting skills development of staff. We have also continued to engage with other colleagues working on HPSR issues in the Western Cape and nationally. We also hosted the first workshop of the CHEPSAA Emerging Leaders programme for 27 emerging HPS researchers from across Africa, to think about the leadership capabilities needed in this field. The Emerging Leaders programme was co-funded by the Rockefeller Foundation.

Continued implementation of work within the District Innovation, Action and Learning for Health Systems *development* (DIALHS) project, funded by the Atlantic Philanthropies. This project is being implemented in collaboration with the SOPH at the University of the Western Cape, and colleagues from the Western Cape health department and City of Cape Town, within the Mitchell's Plain sub-district of the Metro District Health System. In 2013 we continued to: work at local level bringing together a range of local actors from local communities and different government sectors better to understand the locally available health assets and needs, and more specifically engage with Environmental Health Care practitioners; as well as engage with and support primary health care facility managers and subdistrict managers. We also organized a special session at the South African Public Health Association Conference to discuss this work, led by our managerial colleagues, published a chapter in the annual South African Health Review and have prepared and submitted a set of papers for consideration by international journals. Our work is now being carried forward by similar learning site initiatives, which have drawn lessons from DIALHS, in Gauteng and Kenya (funded by the RESYST consortium, see below).

The Collaboration for Health Systems Analysis and Innovation (CHESAI) was initiated during 2012. CHESAI is a collaborative of health policy and systems researchers based in the Western Cape, South Africa-with a focus on strengthening the health policy and systems research field through conceptual and methodological development, as well as interdisciplinary and multisectoral engagement. The main partners are The University of Cape Town and the University of the Western Cape, Schools of Public Health — supported by a grant from the International Development Research Centre, Canada. In 2013 we engaged in a range of reflective activities to share our experience, develop ideas and infer our ongoing research. These included welcoming two practitioner sabbaticants (from the Gauteng and Eastern Cape Departments of Health) to take time out of their work lives to look afresh at a key challenge in their workplace and how to address it, and also welcoming Prof Irene Ageypong from the Ghana School of Public Health to spend time with us

and share her experience and work. Irene travelled with two of her PhD students, with whom we were also able to share and learn. Finally, we established a regular reflective meeting to draw together HPS researches and practitioners in Cape Town, to think together about the nature and challenges of health system development.

In 2013 we initiated work on a new project, funded by the Doris Dukes Charitable Foundation, called *Implementing large-scale health system strengthening interventions: experience from the DDCF's African Health Initiative*. In this project we will closely with colleagues in Mozambique and Zambia to add a qualitative and process evaluation of the health systems strengthening interventions, focussed on health planning and management and primary level quality of care, respectively, they have introduced.

The International Religious Health Assets Programme (IRHAP), formerly based in UCT's Faculty of Humanities has settled into the SOPHFM. International collaborative work continues, including writing and research projects. Several empirical research projects under the IRHAP banner continued in 2013. These included a three-country evaluative case study in Cameroon, Ghana and Malawi of Catholic maternal health service provision and systems interventions - funded by CORDAID. Also completed was the first stage of research on the Health System Strengthening through Strategic Partnership (HESP) Project for the Hospice and Palliative Care Association of South Africa (HPCA) – an evaluation of civil society driven health committees in 32 sites in South Africa. Several small international 'think-tank' meetings were convened by IRHAP in 2013 and early 2014, with a focus on issues such as community systems strengthening and governance of faith-based health institutions.

The HPSP also works with HEU within the RESYST consortium, a UK DfID funded international health systems research consortium (HPSP leads the governance work of RESYST); and in the UNITAS project.

Resilient and Responsive Health Systems (RESYST) is a Consortium that is undertaking health policy and systems research (with a focus on financing, health workers and governance) in a set of African and Asian settings, including India, Kenya, Nigeria, South Africa, Thailand, Tanzania and Vietnam. Funded by DfID, the consortium began in 2011 and will run until 2016. The Health Policy and Systems Division has a particular focus on the governance agenda within the RESYST programme of work. The UNITAS project focuses on monitoring and evaluating policy formulation and implementation processes aimed at achieving universal health coverage in South Africa and Tanzania. The project undertakes monitoring mainly at the district level, with some monitoring and evaluation at the national level. It aims to support implementation processes and will establish an 'early warning system' of implementation difficulties. The project runs from 2011 to 2015 and is funded by the European Union. It is a collaborative project with partners from the London School of Hygiene and Tropical Medicine, Ifakara Health Institute (in Tanzania), Institute of Tropical Medicine Antwerp (in Belgium), Centre for Health Policy, University of Witwatersrand and the Africa Centre in South Africa.

## **Public Health Medicine Division**

The *Health and Human Rights Programme* in the PHM Division undertakes a range of teaching, research and advocacy aimed at helping to build a culture of human rights in South Africa. Its work extends into East and Southern Africa. Research areas include the role of civil society organisations (CSOs) in the realisation of the right to health, community participation in the right to health, the rights of the Deaf in the health care system and how health care providers can be involved in the realisation of the right to health.

The Learning Network for Health & Human Rights (LN) with 5 Western Cape CSOs in partnership with Universities of Maastricht, Warwick and Western Cape continues to explore models for linking civil society action to health rights and to identify best practice for realising health rights. This network draws on a multidisciplinary team of researchers in partnership with CSOs to develop best practice for realising the right to health. CSOs in the Learning Network have been utilising a toolkit for training on the Right to Health to raise awareness and to empower community members to claim their health rights.

A key part of the programme in 2013 focused on community participation as a strategy for the realisation of the right to health. This work followed the release of the results of a two year research project by the Learning Network in the Cape Town Metropole focusing on the challenges faced by health committees as the formal structures for community participation in health. The project has two large grants for ongoing work with Health Committees to enhance community participation as a vehicle for the realization of the Right to Health. This focuses on the roles of Health Committees in a primary health care led health system. One funder is the European Union which has supported projects that enhance the demand for quality primary health care and this project examines health care users experiences as a focus for unlocking opportunities to access quality health services in the Eastern and Western Cape. An additional grant from the International Development Research Centre in Canada supports work with collaborators in Uganda on governance in the health system, specifically focusing on community participation as a key strategy for the realisation of the right to

health. In these projects we continue our collaboration with researchers from Maastricht University, Warwick University and the University of North Carolina.

## **Family Medicine Division**

The mission of the Division of Family Medicine is to graduate doctors who are able to enter their internship and community service years with the appropriate level of confidence and competence when diagnosing and managing common primary care problems. They are able to function fully in the PHC team, and are able to take the lead in district-based health care, teaching and research in any community setting in South and Southern Africa.

Our postgraduate students enrolled for the M Fam Med, M Med (Fam Med), and M Phil (Pall Med) degrees are all required to complete a research dissertation.

## Research highlights for 2013 included the following:

- The Division of Family Medicine partnered with Professor Leslie London in the Public Health Medicine Division and the Learning Network to successfully apply for an EU funded grant for the strengthening of primary health care services in 2012, to the value of around 1 million EURO. Family Medicine has 5 packages in this project to the approximate value of over R5 million over a period of 30 months, viz
- (a) Package 17: Extension of undergraduate student language learning into the 5<sup>th</sup> year of the MBChB curriculum. Two blocks of 5<sup>th</sup> year students have completed the training and we started our third block from the beginning of the new semester in 2014. We successfully ran an SSM in Languages/ Family Medicine for eight students in their second year of study – four in isiXhosa and four in Afrikaans at the Vanguard, Mitchells Plain and Gugulethu CHC's. The Becoming a Doctor SSM concept was flighted on national television (SABC 2) on the "Doctor's orders" show in January 2014.
- (b) Package 18: Providing language instruction in isiXhosa and Afrikaans for service personnel at Delft and Kraaifontein CHC's. Eleven staff members in isiXhosa and six in Afrikaans have successfully completed the course.
- (c) Package 19: PROMS (Patient Related Outcome Measures) being conducted by Palliative Medicine in association with King's College, London. Ethics approval obtained. Data collected from the research sites and data analysis is underway at present.
- Package 20: PCAT (Primary Care Assessment Tool).
  Ethics approval obtained and data collection and analysis nearing completion.

- (e) Package 21: Chronic Disease Audit. Ethics approval obtained and data collection underway.
- A/Professor Derek Hellenberg is the PI for packages 17 and 18
- Dr Liz Gwyther is the PI for the IMPAQT study (Package 19) for the EU grant: Measuring and Improving Outcomes for Patients with Progressive Chronic Disease: a Palliative Care Audit in two Western Cape sites
- Dr Elma De Vries leads the annual audit of chronic diseases of lifestyle for the Western Cape Department of Health. This project has now added a new dimension to the audit tool (that of patient perceptions of the management they receive for chronic diseases at CHC's which forms part of the EU Grant (Package 21).
- Dr Graham Bresick is the PI for the PCAT study that started in 2011 and was completed in 2012. This study has been extended to include a rural and a few more urban sites and forms part of the EU Grant (Package 20).
- Dr Abdul Isaacs is the PI for the Prescription costs study which was started in 2012 and compared medicine costs for chronic diseases at a few CHC's in the Metro District. The first article from this study was accepted for publication in the SAFPJ in 2014. The second article relating to this topic has also been submitted for review.
- Professor D A Hellenberg is the PI of a survey initiated in 2009 of the first graduates of the new curriculum (2007) to assess the usefulness of language learning during the BaDr course in the work environment. Surveys and focus group interviews were done annually until end 2013 to record the effects of innovations in the course structure and content on the outcomes. The data is currently being analysed.
- Dr Nazlie Beckett completed a project: "A Qualitative evaluation of UCT medical students' feedback of the OSCE (Objectively Structured Clinical Examination) at the end of the family medicine clerkship" which has been submitted for publication
- The database of 6<sup>th</sup> year family medicine student CHC-based projects is continuously updated on our database. The database serves as a useful guide for district management, the family physicians and family medicine registrars at the CHCs when deciding on research priorities and interventions to improve delivery of primary health care services
- Meetings with MDHS senior management and staff continued in 2013, to develop a common research agenda, prioritise key research questions and commission research. Our students and staff have addressed many topics which facility managers felt concerned about.

## **School Statistics**

#### Permanent and long-term contract staff

Professors	5
Associate Professors	9
Emeritus Associate Professor	1
Senior Lecturers	14
Lecturers (including part-time)	14
Chief Research Officer	1
Clinical Senior Research Officer	1
Senior Research Officer	6
Research Officer	9
Research Assistant	7
Research Project Management Staff	3
Data Management staff	8
Facilitators	25
Admin and Clerical Staff	26
Total	134

### **Honorary Staff**

Honorary Professor	6
Honorary Associate Professor	5
Honorary Senior Lecturer	10
Honorary Lecturer	18
Honorary Research Associates	11
Visiting Lecturers	10
Total	60

## Students

Doctoral	29
Master's	222
PG Diploma	113
Undergraduate	1245
Total	1609

## **Contact details**

School of Public Health and Family Medicine, Faculty of Health Sciences, University of Cape Town, Observatory, 7925, South Africa Telephone: +27 21 406 6300 Fax: +27 21 406 6459 Web: http://www.publichealth.uct.ac.za/

#### **Research output**

#### **Edited books**

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Rother, H. 2013. Exposing a hidden harm. In D. Jopling (ed), International Innovation, 140pp. Bristol, UK: Research Media Ltd. ISBN 20518552.

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Wandeler, G., Gsponer, T., Mulenga, L., Garone, D., Wood, R., Maskew, M., Prozesky, H., Hoffmann, C.J., Ehmer, J., Dickinson, D., Davies, M., Egger, M. and Keiser, O. 2013. Zidovudine impairs immunological recovery on first-line antiretroviral therapy: collaborative analysis of cohort studies in southern Africa. AIDS, 27: 2225-2232.

Williams, D. and Mohammed, S. 2013. Racism and health II: a needed research agenda for effective interventions. American Behavioral Scientist, 57(8): 1200-1226.

Zamboni, G., de Jager, C.A., Drazich, E., Douaud, G., Jenkinson, M., Smith, A., Tracey, I. and Wilcock, G. 2013. Structural and functional bases of visuospatial associative memory in older adults. Neurobiology of Aging, 34: 961-972.

Zulliger, R., Abrams, E.J. and Myer, L. 2013. Diversity of influences on infant feeding strategies in women living with HIV in Cape Town, South Africa: a mixed methods study. Tropical Medicine & International Health, 18(12): 1547-1554.

# DEPARTMENT OF Radiation Medicine

## **DIVISION OF MEDICAL PHYSICS**

## Head of Division: Ms Hester Burger

## **Divisional profile**

The Medical Physics Division has been actively working towards reinventing themselves over the last twelve months. Five students enrolled in the newly established BSc(Hons)(Medical Physics) course, and the class achieved a 100% pass-rate with a class average of 68.6%.

In addition, the division was involved in the training of two IAEA fellows from Nigeria, one from Zimbabwe, as well as one medical physics intern who will be completing her training in 2014.

## Other activities included:

- PhD students (2)
- MSc student (1 graduated 2013)
- Medical Physics Honours project supervision (5)
- National and international posters/presentations (9)
- IAEA international workshop hosted (13 lectures and practicals)
- Publications (1 published/ 1 in press / 1 SA journal report)
- External examiner/moderator (9)
- Examiner (College of Medicine, BSc(Hons)) (6)
- Departmental lectures (18)
- Formal lectures (231)
- Research and development collaboration projects (2)

During the year, staff was also involved in the design, installation and commissioning of new high technology equipment that will allow for future research in modern radiotherapy treatment techniques.

## **Research Fields and Staff**

## **Head of Department**

#### H. BURGER MSC (MED PHYS) (UP) Modern Radiotherapy and Radiosurgery Treatments and Treatment Planning

## **Deputy Manager**

C TRAUERNICHT MSC (MED) IN MEDICAL PHYSICS (UCT) Nuclear Medicine and Brachytherapy

## Assistant Managers (Medical Physics):

## H MAC GREGOR BSC (HONS) (STARTED NOVEMBER 2012)

Radiotherapy and Advanced Technique QA and Treatment Planning

#### T KOTZE PHD (US)

Diagnostic Radiology teaching and Radiation Protection

## N JOUBERT (WILLEMSE) M.MED.SC MEDICAL PHYSICS (UFS)

Slot-scanning mammography Radiotherapy and Nuclear Medicine

## **Technical Staff**

## **Chief Radiographer**

K Botha Nat Dipl Radiography (Therapy), Dipl Computer Science

## **Mould Room**

## **Chief Radiographer**

S TOVEY DIPL. RADIATION LABORATORY TECHNOLOGY (RLT), NAT DIPL RADIOGRAPHY (DIAGNOSTIC AND RADIOTHERAPY), BTECH (RADIOGRAPHY RADIOTHERAPY)

## **Radiation Technologist**

M HENDRICKS DIPL. RADIATION LABORATORY TECHNOLOGY (RLT), NAT DIPL RADIOGRAPHY (DIAGNOSTIC)

## **Intern Radiation Technologist**

MARILYN MANUEL NATIONAL DIPLOMA IN RADIOGRAPHY (DIAGNOSTIC)

## **Mechanical Workshop**

## **Chief Industrial Technician**

## C THOMSON NTCII

## Artisan

## **RE HISCOCK NIII**

## Secretarial

## Senior Admin Clerk

## O KWAYIBA

## **Contact Details**

Division of Medical Physics, Groote Schuur Hospital/ University of Cape Town, Observatory, 7925 Cape Town Telephone: +27 21 404-6240 Fax: +27 21 404-6269 Email: Hester.Burger@uct.ac.za

## **DIVISION OF NUCLEAR MEDICINE**

## Head of Division: Dr Tessa Kotze

## **Divisional Profile**

Nuclear medicine currently provides a wide spectrum of diagnostic procedures, in-vivo studies and therapy; all pertaining to the use of unsealed sources of radioactivity. Procedures cover the central nervous system, respiratory, cardiac, gastrointestinal, genitourinary, endocrine, lymphatic and skeletal systems. There is access to both SPECT/CT and PET/CT. All procedures are integrated into service provision, training and research. In the department is also an osteodensitometer.

## **Divisional Statistics**

## PERMANENT AND LONG TERM CONTRACT STAFF

#### JOINT STAFF (UCT/PGWC)

Senior Consultant Full time 1 Junior Consultant Full time 1 Senior Consultant Part time 1

## **Research fields and staff**

## **Specialist Staff**

DR TESSA KOTZE Therapy; PET

DR RACHELLE STEYN ERNA

PROF MIKE MANN Peadiatric Nuclear Medicine

## **Undergraduate Staff**

SUPERNUMERARY REGISTRAR DR GARBA YUNUSA REGISTRAR DR NERISHA GOVENDER

## **Contact Details**

Division of Nuclear Medicine, Groote Schuur Hospital and University of Cape Town, Observatory, 7925 Cape Town.

Telephone: +27 21 404-6747 Fax: +27 21 404-3402 Email: Tessa.Kotze@uct.ac.za

## **DIVISION OF RADIATION ONCOLOGY**

## HEAD OF DIVISION - Professor R P Abratt

## **Divisional Profile**

- 1. The Division of Radiation Oncology provides the following services:
  - 1.1 Investigation, management and treatment of all forms of malignant disease. This is co-ordinated by 23 multidisciplinary clinics, which meet weekly.
  - 1.2 Participation in clinical studies, both investigator initiated and as part of cooperative groups.
- Teaching of undergraduate medical courses and provision of post graduate specialists training courses. Pre and post-diplomate instruction to radiographers and post-diplomate courses to nurses. Full training in Radiobiology from undergraduate to honours, master's and doctoral level.
- 3. Provision of a comprehensive clinical radiobiological research facility.

## **Divisional Statistics**

## Permanent and long term contract staff

## JMS staff

Professors 1 1

## **University staff**

Research Staff	3
Administrative/Clerical Staff	1
Total	4

#### Joint staff (UCT/PAWC)

Head of Clinical Unit	1
Senior Full-time Lecturers	3
Lecturers	3
Principal Medical Officers	1
Sessional Medical Officers	3
Medical Scientists	2
Total	13

#### Honorary staff

Honorary Lecturers 3	13
Total	1

#### Postgraduate students

Registrars	16
Total	16

#### **Research Fields and Staff**

#### **Permanent Staff**

#### Specialist Staff

#### PROFESSOR RAYMOND ABRATT

Chief Specialist Radiation Oncology & Head of Division; NRF Rated – Category B

#### DR JEANETTE PARKES

Senior Specialist Radiation Oncology and Senior Lecturer; Main interests - neurological tumours, paediatric tumours, bones and sarcoma

#### DR SAMEERA DALVIE

Specialist Radiation Oncology Lung Cancer; Male genito-urinary tract cancer, Ear, nose and throat cancer

#### DR ZAINAB MOHAMED

Senior Specialist Radiation Oncology and Senior Lecturer; Main interests - Lymphoma, Myeloma, Melanoma, Hodgkin's Disease

#### DR BARBARA ROBERTSON

Specialist Radiation Oncology & Lecturer; Main interests - Thyroid, Oesophageal and Gastro-intestinal cancers, stomach, pancreas, liver, unknown primary cancers.

#### DR LEON VAN WIJK

Senior Specialist Radiation Oncology & Senior Lecturer; Main interests - Gynaecological tumours.

#### DR JULIE WETTER

Specialist Radiation Oncology and Lecturer; Main interests – skin cancers, melanoma, eye Head and neck.

#### DR T NAIKER – STARTED 1 NOVEMBER 2013

Specialist Radiation Oncology - Main interests – breast cancer

#### DR HENRIETTE BURGER

Specialist Radiation Oncology – Main interests – Urology and Oesophagus

#### **Medical Officers**

#### DR CINDY SHEPHERD

Principal Medical Officer Radiation Oncology; Main interests - Lung cancer, Tumours of the thyroid, Male genito-urinary tract cancer.

#### **Scientific Staff**

#### DR ANDRE HENDRIKSE

Senior Medical Natural Scientist & Lecturer; Main interest - Research in Medical Natural Science Radiobiology (research on tumours with experimental animals)

#### DR ALISTAIR HUNTER

Medical Natural Scientist; Main interest - Research in Medical Natural Science Radiobiology (research on tumours with experimental animals)

#### **Contract Research Staff**

PART-TIME CLERICAL RESEARCH ASSISTANTS (DATA MANAGERS)

MRS GLYNIS CHILCOTT MISS E NEL MRS M HENDRICKS

## **Contact Details**

Postal address: Division of Radiation Oncology, Groote Schuur Hospital & University of Cape Town, Observatory, 7925, South Africa Telephone: +27 21 404 4263/5 Fax: +27 21 404 5259 E-mail: Raymond.abratt@uct.ac.za

## DIVISION OF RADIOLOGY

## Head of Division: Professor Stephen **James Beningfield**

## **Divisional Profile**

The Division of Radiology works closely with clinical colleagues and their patients throughout the hospital, both in service and academic capacities. This collaboration involves all major medical, surgical, therapy and women's health areas, including their subspecialties. The recently acquired multi-slice CT's are heavily utilised, especially for vascular and thoracoabdominal problems. Red Cross is making good use of their new MRI and CT scanners. There is now also direct access to PET-CT scanning at Tygerberg. Links to Somerset and GF Jooste Hospitals remain strong, with some teaching activity also at Victoria Hospital. The experience of our post-retirement sessional staff continues to benefit the Division. The impact of the full conversion to digital radiology over the next year has been very positive, with electronic requests and reports almost universal

All available posts are filled with interest in supernumerary registrar posts from within and outside the country remaining strong.

## **Research Fields and Staff**

#### PROFESSOR STEPHEN BENINGFIELD

Hepatobiliary, vascular, interventive radiology, computer applications and digital radiology.

#### DR NAZIR AHMED

Cross-sectional imaging, colorectal imaging.

#### DR SALLY CANDY

Neuroradiology and Magnetic Resonance Imaging.

#### DR DILESH CHIBA

Musculoskeletal radiology, cross-sectional imaging, interventive radiology.

#### DR QONITA SAID-HARTLEY

High resolution computerized tomography and fine needle biopsies, chest radiology.

#### DR THARBIT HARTLEY

Hepatobiliary, vascular, interventive radiology

#### DR PAUL SCHOLTZ

Cardiac and vascular radiology

#### DR ROBERT SEGGIE

Ultrasound, computerised tomography and general radiology.

#### DR TRACY KILBORN Paediatric radiology.

#### DR NICOLE WIESELTHALER Paediatric radiology.

#### DR E BANDERKER

Paediatric Radiology

#### **Divisional Statistics**

#### Permanent and long-term contract staff **University staff**

Professor and Head of Division	1
Administrative Staff	1
Total	2

#### **JMS Staff**

Total		11
Lecturers		8
Senior Le	cturers	3

#### Part-time JMS Staff

Emeritus Professor	1
Emeritus Associate Professors	2
Total	3

#### Part-time UCT Staff

Digital imaging assistant	1	
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#### **Students**

Master's [registrars]	22
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#### Teaching

#### Postgraduate

This major activity continues, with new inputs from the University, Colleges and the HPCSA having significant roles. More structured teaching, regular assessments and revised examination structure plus obligatory theses are now reality. The division is has upgraded and complete refurbished into a fully digital radiology unit, with a formal Picture Archival and Communication Systems (PACS) and Radiology Information System (RIS) in place. This is having a major beneficial effect on the manner and quality of postgraduate teaching and supervision, both in radiology and other specialties.

• Undergraduate

Regular weekly structured teaching sessions continue, with the case-based multidisciplinary meetings in various specialties allowing both under- and post-graduate students to see the impact of imaging on clinical-decision making

#### Research

There are a number of collaborative and self-initiated projects running, with the recent requirement for a thesis dissertation leading to increased activity. The consequences of digital imaging and newer modalities remain strongly felt, with diversification of interests. These continue to be largely on the basis of combined collaboration and multidisciplinary applied clinical research, together with some basic research that is also being undertaken in MRI and digital mammography. There is a good prospect of a full body 3T MRI being installed soon.

#### Service

The increase in service load, particularly on the multislice CT's, is placing an increased demand on reporting time. The PACS and RIS does allow more efficient distribution of the resulting reporting work.

Close interaction with UCT PAH clinical service adds another dimension to the work undertaken.

## Social responsiveness

There is ongoing collaboration with a number of the closer satellite hospitals, most notably Mitchells Plain, New Somerset and Victoria, but also II Military Hospital (with significant recent equipment upgrades), as well as with the newly-developed and refurbished regional hospitals such as George, Worcester and Paarl, Khayelitsha and Mitchells Plain, that are likewise converting to digital imaging and PACS.

## **Publications**

These are mostly on the basis of close clinical collaboration and applied research, although some more basic MRI and digital radiography research has also been published

## General

The refashioning of the division into a purely digital system has had a major impact on the manner of our clinical interaction within and outside the division.

## **Contact Details**

Postal Address: Division of Radiology, Room 16, C16, Groote Schuur Hospital and University of Cape Town, Private Bag, Observatory, 7935 Telephone: +27 21 404 4184 or 406 6426 Fax: +27 21 404 4185 E-mail: Steve.Beningfield@uct.ac.za

## **Research output**

#### Articles in peer-reviewed journals

Alleyne-Mike, K., Mohammed, K., Van Wijk, A.L. and Botha, F.C.J. 2013. Unique case of dual gynecological malignancies coexisting with an uncommon thyroid lymphoma. International Journal of Case Reports and Images, 4(12): 714-718.

Alleyne-Mike, K., Van Wijk, A.L. and Hunter, A.J. 2013. A restropective review of patients with stage IB2 cervical cancer treated with radical radiation versus radical surgery as a primary modality. International Journal of Gynecological Cancer, 23(7): 1287-1294.

Hamunyela, R., Kotze, T. and Philotheou, G. 2013. Normal reference values for thyroid uptake of technetium-99m pertechnetate for the Namibian population. Journal of Endocrinology, Metabolism and Diabetes of South Africa (JEMDSA), 18(3): 142- 147.

Hofmeyr, S., Burmeister, S., Beningfield, S.J. and Krige, J.E.J. 2013. Pancreatic pseudocyst haemorrhage treated by common hepatic artery embolisation. The South African Gastroenterology Review, 2013: 21-22.

Katz, I., Nkala, B., Dietrich, J., Wallace, M., Bekker, L., Pollenz, K., Bogart, L.M., Wright, A.A., Tsai, A.C., Bangsberg, D. and Gray, G. 2013. A qualitative analysis of factors influencing HPV vaccine uptake in Soweto, South Africa among adolescents and their caregivers. PLoS One, 8(8): e72094.

Kotze, T. 2013. Nuclear medicine in oncology 2: breast, prostate and cervical cancer, melanoma and neuro-endocrine tumours. CME-Continuous Medical Education, 31(8): 284-288.

McDonald, I.M., Mate, R.A., Zusi, C., Huang, H., Post-Munson, D.B., Ferrante, M.A., Gallagher, L., Bertekap, R.L., Knox, R.J., Robertson, B.M., Harden, D.G., Morgan, D.G., Lodge, N.J., Dworetzky, S.I., Olson, R.E. and Macor, J.E. 2013. Discovery of a novel series of quinolone a7 nicotinic acetylcholine receptor agonists. Bioorganic & Medicinal Chemistry Letters, 23: 1684-1688. Mohammed, K. and Van Wijk, A.L. 2013. The types and treatment outcomes of germ cell tumours of the ovary seen at Groote Schuur Hospital, Cape Town, between 1994 and 2008: a retrospective survey. Southern African Journal of Gynaecological Oncology, 5(1): 21-28.

Mohammed, K., Alleyne-Mike, K. and Parkes, J. 2013. Unexpected brain atrophy following administration of intratumoral interferon alpha-2b for cystic craniopharyngioma. International Journal of Case Reports and Images, 4(12): 719-722.

Pather, S., Mohamed, Z., McLeod, H.D. and Pillay, K. 2013. Large cell lymphoma: correlation of HIV status and prognosis with differentation profiles assessed by immunophenotyping. Pathology & Oncology Research, 19(4): 695-705.

Patterson, E., Nunez, M., Philotheou, G. and Hutton, F. 2013. Meeting the challenges of global nuclear medicine technologist training in the 21st Century: the IAEA distance assisted training (DAT) program. Seminars in Nuclear Medicine, 43(3): 195-201.

Sauer, J., Simonds, H., Van Der Merwe, H. and Hattingh, S.M. 2013. A retrospective analysis comparing clinical staging with magnetic resonance imaging staging in patients with cervical cancer. Southern African Journal of Gynaecological Oncology, 5(1): 11-15.

Smit, B.J. and Van Wijk, A.L. 2013. An improved, disposable indwelling intrauterine tube (Smit Sleeve) not requiring retaining stitches for brachy-radiotherapy for carcinoma of the cervix. European Journal of Gynaecological Oncology, XXXIV(4): 289-290.

Stannard, C.E., Sauerwein, W., Maree, G.J. and Lecuona, K. 2013. Radiotherapy for ocular tumours. Eye, 27(2): 119-127.

Stannard, C.E., Vernimmen, F., Carrara, H.R.O., Jones, D., Fredericks, S., Hille, J. and de Kock, E. 2013. Malignant salivary gland tumours: can fast neutron therapy results point the way to carbon ion therapy? Radiotherapy and Oncology, 109(2): 262-268.

## Peer-reviewed published conference proceedings

Perks, T., Trauernicht, C.J., Hartley, T., Hobson, C., Lawson, A., Scholtz, P., Dendere, R., Steiner, S.V.G. and Douglas, T.S. 2013. Effect of aluminium filtration on dose and image quality in paediatric slop-scanning radiography. Proceedings of 35th Annual International Conference of the IEEE Engineering in Medicine and Biology Society in Conjunction with the 52nd Annual Conference of Japanese Society for Medical and Biological Engineering (JSMBE), 3-7 July 2013, Osaka, Japan. Piscataway, NJ, United States of America: IEEE EMBS. ISBN 9781457702143.

Perks, T.J., Trauernicht, C.J., Hartley, T., Hobson, C., Lawson, A.J., Scholtz, P., Dendere, R., Steiner, S.V.G. and Douglas, T.S. 2013. Effect of aluminium filtration on dose and image quality in paediatric slot-scanning radiography. Proceedings of 35th Annual International Conference of the IEEE Engineering in Medicine and Biology Society in Conjunction with the 52nd Annual Conference of Japanese Society for Medical and Biological Engineering (JSMBE), 3-7 July 2013, Osaka, Japan. Piscataway, NJ, United States of America: IEEE EMBS. ISBN 9781457702143.

# **DEPARTMENT OF SURGERY**

## Head of Department: Professor Del Kahn

## **Departmental Profile**

The Department of Surgery comprises the nine Divisions: General Surgery, Cardiothoracic Surgery, Emergency Medicine, Neurosurgery, Ophthalmology, Orthopaedics, Otorhinolaryngology, Plastic Surgery and Urology

Each of the Divisions functions very independently with regard to administration, clinical service, undergraduate and postgraduate teaching, and research. The Special Clinical expertise, research interests, and outstanding achievements over the last year, are documented in the individual divisional profiles.

The Department of Surgery Research Day, organised by Dr Sally Rothemeyer, was a most successful collaboration between the Divisions. Professor Graham Fieggen delivered the John Terblanche Lecture.

## **DIVISION OF GENERAL SURGERY**

## Head of Division: Professor Del Kahn

## **Divisional Profile**

The four surgical firms within the Division of General Surgery are responsible for Hepatobiliary Surgery, Surgical Oncology/Endocrine Surgery, Colorectal Surgery, and Vascular Surgery. The Surgical Intensive Care Unit, the Trauma Unit, and the Transplant Unit are also part of the Division. In addition there is an Acute Care Surgery Firm which managers all the non-trauma surgical emergencies. The Division prides itself on maintaining high standards of clinical service, and teaching of both undergraduates and postgraduates. The Division continues to function as a true academic unit, with its members making significant contributions at both local and international meetings, while at the same time maintaining a high research output.

## **Divisional statistics**

#### Permanent and Long Term Contract Staff

Professors	7
Senior Lecturers	13
Administrative Staff	6
Total	19

## **Research fields and staff**

#### Permanent Staff (Full-Time)

PROFESSOR JEJ KRIGE Hepatobiliary Surgery

ASSOCIATE PROFESSOR A NICOL Trauma Surgery

ASSOCIATE PROFESSOR P GOLDBERG Colorectal Surgery

ASSOCIATE PROFESSOR WL MICHELL Critical Care

ASSOCIATE PROFESSOR P NAVSARIA Trauma Surgery

ASSOCIATE PROFESSOR E PANIERI Surgical Oncology

DR M BERNON Hepatobiliary Surgery

DR A BOUTALL Colorectal Surgery

DR S BURMEISTER Hepatobiliary Surgery

DR L CAIRNCROSS Surgical oncology

DR G CHINNERY Upper Gastrointestinal Surgery

DR N CLOETE Vascular Surgery DR S EDU Trauma Surgery

DR J KLOPPER Acute Care Surgery

DR C KLOPPERS Acute Care Surgery

DR E MULLER Transplantation

DR NG NAIDOO Vascular Surgery

DR D THOMSON Critical Care

DR C WARDEN Acute Care Surgery

## **Contact Details**

Division of General Surgery, University of Cape Town, Groote Schuur Hospital, J46, Old Main Building, Observatory 7925 Tel: +27 21 406 6475 Fax: +27 21 448 6461 UCT web: http://www.uct.ac.za

## **DIVISION OF OPHTHALMOLOGY**

## Head of Division: Professor C. Cook

## **Divisional Profile**

The Division of Ophthalmology combines an academic hospital service with University teaching, clinical training and research.

Specialist tertiary care clinical services are provided to patients in the Western Cape and beyond.

Teaching is provided to fifth year medical students, and specialist training of both local graduates and graduates from other countries is provided.

A postgraduate diploma course in community eye health and a master's in public health with a community eye health track is provided for Vision 2020 programme managers working in sub Saharan Africa.

## **Divisional statistics**

#### Permanent and Long Term Contract Staff

Professors	1
Honorary professors	2
Senior Lecturers	6
Lecturers	11
Administrative Staff	1
Total	21

#### Students

Master's	10
Postgraduate diploma	8
Undergraduate	187
Total	205

## **Research fields and staff**

#### Permanent Staff (Full-Time)

## PROFESSOR C. COOK

Professor and Head, Division of Ophthalmology, UCT Faculty of Health Sciences, Groote Schuur Hospital and Red Cross Children's Hospital. Community eye health, glaucoma.

#### DR N. DU TOIT

Consultant Specialist, Groote Schuur Hospital. Anterior segment surgery, glaucoma, ocular trauma.

#### DR K. LECUONA

Consultant Specialist, Groote Schuur Hospital. Prevention of blindness in developing countries, lacrimal drainage disorders, inflammatory eye disease, ocular oncology.

#### DR T. POLLOCK

Consultant Specialist, Red Cross Children's Hospital. Paediatric ophthalmology.

#### DR J. RICE

Consultant Specialist, Groote Schuur Hospital. Vitreoretinal disease.

#### DR J STEFFEN

Consultant Specialist, Groote Schuur Hospital. Vitreoretinal disease.

#### DR C. TINLEY

Consultant Specialist, Red Cross Children's Hospital. Paediatric ophthalmology.

#### Permanent Staff (Part-Time)

DR E. ALBRECHT Medical retina.

DR M. ATTENBOROUGH Cornea.

DR N COCKBURN Oculoplastics

DR J. DE VILLIERS Strabismus.

DR R. GROTTE Paediatric ophthalmology

DR D. HARRISON Oculoplastics

EMERITUS PROFESSOR A. MURRAY Strabismus.

DR A. PERROTT Glaucoma.

DR P. STEVEN Neuro-Ophthalmology.

DR K SUTTLE Surgical retina, oculoplastics.

DR H. VAN VELDEN Surgical retina.

#### **Honorary Staff**

#### PROFESSOR P COURTRIGHT

Epidemiologist. Director of Kilimanjaro Centre for Community Ophthalmology.

#### PROFESSOR S LEWALLEN

Ophthalmologist. Director of Kilimanjaro Centre for Community Ophthalmology.

#### **Contact Details**

Division of Ophthalmology, University of Cape Town Medical School, Observatory 7925 Tel: +27 21 406 6216 Fax: +27 21 406 6218 UCT General enquiries: +27 21 650 9111 UCT web: http://www.uct.ac.za

## **DIVISION OF ORTHOPAEDIC SURGERY**

## Head of Division: Professor Robert Dunn

## **Divisional Profile**

The Division of Orthopaedic Surgery continued to provide secondary and tertiary Orthopaedic services to the Western Cape and surround surrounding communities organized in the following sub-units: Trauma, Hands, Acute Spine Injury Unit, Spine Surgery Unit, Upper limb unit, Lower Limb unit and Orthopaedic Oncology. This comprehensive service is made possible with the input from enthusiastic sessional staff from private practice, highlighting the benefits of public-private partnerships.

This platform provides an excellent training experience for our 19 registrars, with all 4 senior being successful in their exit exams in this period.

Increasing emphasis has been placed on restoring the large joint arthroplasty throughput. Total hip and knee output has doubled compared to recent history due to reallocation of theatre resource. Current challenges remain the high trauma and infectious pathology case load, necessitating ongoing unacceptable late night surgery on the emergency lists.

## **DIVISION OF EMERGENCY MEDICINE**

## Head of Division: Professor LA Wallis

## **Divisional Profile**

Emergency Medicine is run as two academic Divisions (at UCT and SUN) but has a single Head. The Division utilises various academic and satellite hospitals for the purposes of teaching and research; these include: Groote Schuur, Red Cross War Memorial Children's, Victoria, GF Jooste, Paarl, and New Somerset Hospital. The types of patients seen and emergencies treated vary among hospitals, allowing our MMed students to become fully competent Emergency Medicine specialists.

The Division places an emphasis on post graduate programmes, with 15 PhD students, 5 MSc, and 20 MPhil. In 2013, the Division produced 30 publications in peer-reviewed journals and contributed to 10 book chapters. The Division's research has been focused in the following areas: emergency care systems, emergency ultrasound, pre-hospital care and disaster medicine, and mHealth.

The Division has 1 Professor, 2 Senior Lecturers, 3 Lecturers, and 1 Research Coordinator between SU

and UCT. There are 9 honorary lecturers at SU and an additional 10 honorary lecturers at UCT.

Head of Division (UCT, SU & PGWC) PROFESSOR LEE A. WALLIS MBCHB MD DIMC DIP SPORT MED FRCSED FCEM FCEM(SA) FIFEM

Head of Education (UCT & PGWC) HEIKE I. GEDULD MBCHB FCEM(SA) MMED(EM)

MPhil Programme Convenor TYSON B. WELZEL MBCHB DIPPEC H DIP INTMED DIP HIV Man DTM&H Dip ForMed(Clin/Path) BSc(Med) (Hons)(Diving Med) EMDM MMedSc (Clin Epi)

## **Divisional Statistics**

## Permanent and Long-term UCT Contract Staff

Professor	1
Senior Lecturers	2
Research Staff	1
Total	4

## Honorary staff

Honorary Lecturers	10
Total	10

## Students

PhD	14
MMed / College	16 (&16 Stellenbosch)
MMed supernumerary	6 (& 6 Stellenbosch)
MPhil	20
MSc	5
Undergraduate	3rd, 4th, 5th and 6th years

## **Contact Details**

Divisional Website: www.emergencymed.co.za Telephone: +27 21 948 9908 Fax: +27 21 948 9909 Lee.wallis@uct.ac.za Postal Address: Division of Emergency Medicine, University of Cape Town, Medical School, Groote Schuur Hospital, J46 Old Main Building, Observatory, 7925 Tel: +27 21 948 9908 Fax: +27 21 948 9909 UCT General enquiries: +27 21 650 9111 UCT web: http://www.uct.ac.za

## **DIVISION OF NEUROSURGERY**

2013 saw the fruition of a number of long-term objectives concerning infrastructure and staffing. The establishment of the UCT/GSH Neurosurgery Clinical Hub in the F3 Core Area has transformed our meetings and we were delighted to acknowledge the donors who made it possible, especially the Parker family and the Mauerberger Foundation Fund at an opening ceremony on 22 August 2013. A new Cathlab at UCTPAH enhanced the neurointerventional program and the first fluorescence-guided glioma resection was performed by Dr Sally Rothemeyer.

Members of the Division collaborated with our counterparts in Neurology to run a very successful GP Refresher Course in February and this was matched by the first edition of Continuing Medical Education (March 2013) devoted entirely to neurosurgical topics. Dr Rothemeyer and Dr David Le Feuvre organised the Surgical Research Day and the year ended on a high note on the international front with Professor Anthony Figaji hosting the 4<sup>th</sup> biennial meeting of the International Society for Intraoperative Neurophysiology (ISIN).

Well-deserved promotions went to Professor Allan Taylor (Head of Clinical Unit), Professor Patrick Semple (Professor) and Dr David Le Feuvre (Associate Professor). This year saw the award of a number of substantial research grants and training fellowships. Dr Tiago Morgado was appointed as the inaugural Neurocritical Care Fellow (funded by Johnson and Johnson) and the Division hosted our first ever postdoctoral student in Dr Nelleke Langerak (UCT Postdoctoral Award) who received a prestigious CIPHER grant from the International AIDS Society which will enable her to stay on as a Senior Research Officer. Dr Llewellyn Padayachy received a Harry Crossley Award for his doctoral research, Ursula Rohlwink a CIDRI Wellcome Trust Postdoctoral Award pending completion of her PhD in 2014 and Professor Figaji received a substantial research grant from the Cancer Research Initiative of South Africa (CARISA) and was nominated by the University Selection Committee for the very prestigious SARChI Chair in Clinical Neuroscience.

We were fortunate to have Dr Nte Mjoli stay on as Chief Registrar while Dr Edwin Mogere passed the FCNeurosurg(SA) exam. Two registrars received major international awards. Dr David Roytowski received the International Abstract Award from the American Association of Neurological Surgeons and was invited to present at the main plenary session, an extraordinary achievement while Dr Mogere received the Professor Ming Chien Kao Scholarship from the World Federation of Neurosurgical Societies and presented his work at the 14<sup>th</sup> World Congress of Neurosurgery in Seoul, Korea where he also participated in the Pediatric neurosurgery Pre-Congress Course, talking on *Management of asymptomatic patients: chronic subdural haematoma*. Dr Rohen Harrichandparsad, a neurosurgeon from Durban, completed training in neuro-intervention and is now running a service at the Inkosi Albert Luthuli Central Hospital. Visiting professors included Dr Abhaya Kulkarni (Hospital for Sick Children, Toronto, Canada) and Dr Mohamed Raji Mahmud (National Hospital Abuja, Nigeria).

We were greatly honoured by the generous establishment of the Estelle Yach Award by the Mauerberger Foundation Fund and this will be used to establish an annual neurosurgical meeting in Cape Town. A great deal of work went into organizing an annual ISPN/ ESPN African Paediatric Neurosurgery Course which will kick off in Pretoria in March 2014. Finally, the plans to return the academic department to J Block, co-located with Neurology and Neuropsychology as a Clinical Neurosciences Centre were formally approved by the hospital and submitted to the Provincial Department of Health with a request for support.

## Postgraduate students

Dr Padayachy registered for a PhD and Ursula Rohlwink continued with her PhD (Neuroscience) in Neurosurgery, while the number of neurosurgical trainees grew to 11. Registrars included Drs Nte Mjoli, Edwin Mogere, Johan Malan, David Roytowski, Nico Enslin, Mohamed Ben Husein, Ncedile Mankahla, Emmanuel Wegoye with Drs Chris Young and Nqobile Thango as medical officers and Dr Tiago Morgado as the first ever Neurocritical Care Fellow.

## **Research Grants**

Generous grants from the Mauerberger Foundation Fund, the Parker Family, the Wellcome Trust, the Medical Research Council of South Africa, the Integra Foundation and Johnson & Johnson (Codman), Baroque Medical, Boston Scientific, Karl Storz and the University of Cape Town (including the Department of Surgery and the Department of Paediatrics and Child Health) are gratefully acknowledged.

## **Contact Details**

Postal address: H-53, Old Main Building, Groote Schuur Hospital, Observatory, 7925, South Africa Tel: +27 21 406 6213 Fax: +27 21 406 6555 UCT General enquiries: +27 21 650 9111 UCT web: http://www.uct.ac.za

## **DIVISION OF UROLOGY**

## Head of Division: Associate Professor JM Lazarus

## **Divisional Profile**

The Division of Urology renders a urological service to Groote Schuur Hospital, Red Cross War Memorial Children's Hospital and Somerset Hospital. An operating list is done once per week at Eerste river Hospital, operating on Groote Schuur Hospital patients.

A Prof John Lazarus is head of Paediatric Urology at Red Cross Hospital and Dr Lisa Kaestner attends Somerset Hospital for ward rounds and outpatients. The operating list at Eerste River Hospital is done by a Senior Registrar assisted by Professor Johan Naudé (ex head of Division of Urology).

Undergraduate teaching is provided to 6<sup>th</sup> year medical students, who do a two week block in Urology. Postgraduate training is provided to Urology Registrars and also to supernumerary registrars. The members of our division make significant contributions at both local and international meetings. A number of our members have attended instructional courses both locally and overseas. The Division has maintained its productivity despite staff shortages and the financial crisis.

The Division is involved with two combined clinics – Urological Oncology Clinic (with Radiation Oncologists) and Female Continence Clinic (with Gynaecologists). We run a number of other specialised clinics – Adolescent Spinal Defects Clinic, Haematuria Clinic, Stricture Clinic, Erectile Dysfunction Clinic, Reconstructive Urology Clinic and Metabolic Stone Clinic.

## **Divisional Statistics**

#### Permanent and Long-term Contract Staff

Principal Lecturer	1
Senior Lecturers	3
Administrative	1
Sessional Senior Lecturers	3
Total	8

#### Students

MMed	5
Undergraduate (6th years)	187
Total	192

## **Research Fields and Staff**

#### PROFESSOR R D BARNES

Metabolic aspects of Urolithiasis, Urological Oncology

#### PROFESSOR A R PONTIN

Renal infections in diabetics, Female Incontinence, Urological Oncology

#### DR J LAZARUS

All aspects of Paediatric Urology; Surgical Treatment of Renal Calculi

#### DR S SINHA

Widening indications for laparoscopic surgery in urology; double J stent insertion under local anaesthetic; radical cystectomy and extended pelvic lymphadenectomy

#### DR L KAESTNER

Prostate cancer; Renal Transplantation; Urogynaecology

#### DR A VAN DEN HEEVER

Results of urethroplasty for urethral strictures

#### DR M KOLIA

Retrospective Review Prostatectomies done between 2005 and 2011 at Groote Schuur Hospital

#### DR F CASSIM

Retrospective Review of Bladder of Open versus Laparoscopic Radical Cystectomy for the Treatment of Bladder Cancer: Complications and Oncological Outcome

## **Contact Details**

Postal Address: Division of Urology, Area E26, New Groote Schuur Hospital, Anzio Road, Observatory, 7925 Telephone: SA (021) 406 6529 Fax: SA (021) 406 6122 e-mail: lesley.burke@uct.ac.za

## **DIVISION OF OTOLARYNGOLOGY**

## Head of Division: Professor Johan Fagan

## **Divisional Profile**

The Division of Otolaryngology combines an academic hospital service with university teaching, training and clinical research. It provides specialist clinical services to patients in the Western Cape and beyond. Its university responsibilities include in-hospital and community-based training of 5<sup>th</sup> year medical students, teaching of dental and paramedical students, and specialist training of both local graduates and graduates from other countries. An outreach programme supplements the

training of students and primary health care workers in the fundamentals of ear care. We continue to provide specialist training to supernumerary registrars from other African countries, always having 2-3 such trainees on our staff. We recently trained our 8<sup>th</sup> UCT Karl Storz Fellow in Advanced Head and Neck Surgery from Malawi. Previous fellows are from Senegal, Nigeria, Ghana (2), Kenya, Uganda and Rwanda. All have returned to teaching hospital in their home countries. Our next fellow is from Tanzania. This fellowship training, the only such training in Africa, has made a significant contribution to the quality of head and neck care in Sub-Saharan Africa, and strengthened UCT's connections with other African countries.

## **Research outputs**

The Division had 7 publications in peer-reviewed journals in 2013. Dr Kate Stephenson (registrar) won the award for the best presentation at the annual *UCT Department of Surgery Research Day* and at the 2013 National Meeting of the *South African Society of Otolaryngology - Head and Neck Surgery*. Two registrars (Drs Pedro Monteiro and Gavin Quail) presented their research at the 2013 *IFOS World Congress* in Seoul, S Korea.

## **Open Access Textbooks**

Prof Fagan edits and publishes two open access textbooks which are hosted on the UCT webserver. Chapters from *The Open Access Atlas of Otolaryngology, Head & Neck Operative Surgery* have been downloaded >185 000 times, currently at a rate of >500 downloads per day. Chapters from *The Open Access Guide to Audiology and Hearing Aids for Otolaryngologists* have been downloaded >15 000. Although primarily directed at surgeons in Developing Countries, the biggest users of the textbooks, following India and South Africa, are the USA and the UK. Chapters are authored by international experts. From UCT, Prof Fagan has authored 34 chapters, and Dr Tasheem Harris 10 chapters, and Dr Shazia Peer 1 chapter. The textbooks are reportedly the standard surgical text in some countries.

## **Divisional statistics**

#### Permanent and Long-term Contract Staff

Total	16
Administrative Staff	1
Audiologists	3
Lecturers (part-time)	6
Lecturers	5
Professors	1

## Students

Master's	9
Karl Storz Fellow in Advanced Head and Neck	1
Surgery	

## **Research fields and staff**

#### J.J. FAGAN

Head and Neck Cancer; Developing World ENT

#### D.E. LUBBE

Rhinology; Minimally invasive cranial base surgery

#### G.J. COPLEY

Paediatric ENT, ENT primary care

#### T. HARRIS

Otology; Head and Neck

#### E. MEYER

Otology; Paediatrics; Head and Neck

#### O. EDKINS

Sialendoscopy; General ENT

## **Contact Details**

Postal Address: Division of Otolaryngology, Faculty of Health Sciences, Anzio Road, Observatory, 7925 Tel: +27 21 406 6420 Fax: +27 21 448 8865 UCT General enquiries: +27 21 650 9111 UCT web: http://www.uct.ac.za

## CHRIS BARNARD DIVISION OF Cardiothoracic Surgery

## Head of Division: Professor Peter Zilla

## **Divisional Profile**

The Division offers the full range of adult and paediatric cardiac and thoracic surgery services, catering to all forms of congenital heart disease, myocardial revascularisation (on- and off-pump), cardiac valvular repair and replacement surgery as well as thoracic aortic surgery. Research will be conducted within the Division's Cardiovascular Research Unit during 2014 to evaluate an affordable Left Ventricular Assist Device (VAD) for use at Red Cross Children's Hospital. VADs promise to allow a period of stability and lead to recovery of the heart, or alternatively allow survival until cardiac transplantation in otherwise inoperable cases, for example primary pump failure due to viral infection.

Currently, the use of such a device is prohibitively expensive in a developing world scenario.

The Division's transcatheter valve programme was officially launched in March 2013. Groote Schuur Hospital has been approved by Department of Health Head Professor Househam as a Centre of Excellance for Transcatheter Aortic-Valve Implantation (TAVI) services for current clinical cases. The development of low cost TAVI solutions appropriate to Subsaharan Africa is currently being conducted by a University of Cape Town startup company (Strait Access Technology) based in the Cardiovascular Research Unit and formed around IP originally developed there. The goals of this company are acutely aimed at collaborative studies together with the medical device industry and other international academic units to produce cost-effective devices which are more readily appropriate to the developing world. Preclinical testing of prototype designs is anticipated in 2014. A second phase of funding has secured another 33mio Rand for the next two years of this project.

Hybrid minimally invassive/minimum access procedures were also launched in 2013. The envisaged 'hybrid' operating theatre for this purpose has been approved and building construction is planned for April 2014. While funding of the C-arm and beds remain an issue, funding has been secured for the construction phase. This facility will not only offer to reduce hospital stays but remove the costs of open heart surgery thereby bringing heart valve treatment closer to the third world where rheumatic disease remains highly prevalent.

## Divisional Profile (Cardiovascular Research Unit)

Although 2013 continued to remain financially challenging, the Western Cape Heart Research Grouping of the Medical Research Council, of which the Cardiovascular Research Unit is a member, continued to support essential basic research and will continue to do so in 2014. The Unit also relies on National Research Foundation research grants.

A significant breakthrough in our synthetic vascular graft research was achieved in the previous year where spontaneous endothelialization of the luminal surface across an engineered porous graft wall was shown to be independent of trans-anastomotic outgrowth. A confluent endothelial lining in small diameter vascular grafts remains the 'Holy Grail' in humans and is essential for long-term patency.

In 2013, the breakthrough results on porous polyurethane grafts were published in an international peer reviewed journal and followed by a successful study to elucidate and differentiate between the two

non-trans-anastomotic modes of healing, namely transmural and fallout healing. The former was shown to be the most prevalent and reliable. These findings may be useful for the development of clinical peripheral vascular (including endolumenal) grafts, as transmural endothelialization remains a viable healing mode in humans. Continued work in this field in 2014 will focus on accelerating the healing response.

A collaboration with Gothenburg University in the field of vascular grafts was concluded, with publication of the results anticipated in 2014. Similarly, publication of the initial results on our studies with Clemson University on the use of elastin-derived grafts is imminent, and work continues in a large animal model.

Research continued to focus on a regenerative medicine approach based on remodelling of synthetic engineered hydrogels. A model for assessment of the regenerative capacity of these synthetic hydrogels in the treatment of myocardial infarction has generated further promising results. Therapeutic benefits with respect to cardiac function and scarring were shown for hydrogels carrying growth factor coacervates. Strong preliminary data has been obtained showing both improved engraftment and therapeutic effect of stem cells delivered with the synthetic hydrogel into infarcted hearts. Synthetic 'smart' hydrogels were also developed that were shown to control invasion of specific cell types, a finding that has generated considerable international interest in the field of tissue regeneration.

Building on the groundwork laid down in 2012 with respect to porcine pericardial tissue, research evaluating the immune and inflammatory cell responses as well as the potential for mineralisation and resorbtion of animal tissue used in the construction of 'bioprosthetic' transcatheter heart valve designs, in 2013 concentrated on understanding the benefits of tissue decellularisation, the introduction of different covalent 'cross-links' and capping alternatives and the use of non-covalent agents when applied to bovine pericardium. A short list of regimens emerging from that research are already undergoing preclinical testing in a circulatory model.

Milestones of the Biomechanical Sciences Group in 2013 included the successful completion of a 3-year project into biomechanics of biomaterial therapies for myocardial infarction funded from the South African Centre for High Performance Computing; the commencement of an interdisciplinary collaborative project aiming at reducing the failure rate of arteriovenous access for haemodialysis in patients with end-stage renal diseases and the graduation of two M.Sc.(Med) students with distinction. The group also extended its activities in the biomechanics of single cells through organization of an international event on cell mechanics and mechanobiology in Cape Town

with speakers from the UK, Germany, Spain and South Africa that included a meeting with the UK Minister for Science and Universities, Rt. Hon. David Willets.

## **Divisional Statistics**

#### Permanent and Long Term Contract Staff

Professor	1
Associate Professors	5
Senior Consultants	3
Assistant Director	1
Senior Lecturer	1
Supernumerary Registrars	2
Surgical Registrar	6
Surgical Rotator	1
Senior Medical Officer	1
Senior Scientific Officer	2
Secretary	2
Clinical Technologist/Perfusionist	4
TOTAL	29

#### Students

Postdoctoral research fellows	3
Doctoral	4
M.Med.	4
Master's	5
Honours	1
TOTAL	17

## **Research Fields and Staff**

#### **Permanent Staff**

PROFESSOR PETER ZILLA Head of Division

ASSOCIATE PROFESSOR JOHAN BRINK Clinical Director

ASSOCIATE PROFESSOR JOHN HEWITSON Section Head: Paediatric Surgery

ASSOCIATE PROFESSOR ANTHONY LINEGAR Section Head: Thoracic Surgery

ASSOCIATE PROFESSOR DEON BEZUIDENHOUT Senior Lecturer, Section Head Polymer Sciences

ASSOCIATE PROFESSOR THOMAS FRANZ Section Head: Biomechanics

#### DR PAUL HUMAN

Research Director, Section Head Pathobiology

#### DR LOVEN MOODLEY

Section Head: Thoracic Surgery

### DR ANDRE BROOKS

Senior Consultant

DR JACQUES SCHERMAN Senior Consultant

#### DR NEIL DAVIES

Senior Lecturer, Section Head Biology and Regeneration

## **Contact Details**

Chris Barnard Division Of Cardiothoracic Surgery D24, New Groote Schuur Hospital, Anzio Road, OBSERVATORY 7925, Cape Town, South Africa Tel: +27 21 406 6181 Fax: +27 21 448 1145 Web: http://www.health.uct.ac.za/departments/ surgery/cardiothoracic/ UCT General enquiries: +27 21 650 9111 UCT web: http://www.uct.ac.za

## **Cardiovascular Research Unit**

Room 3.13, Chris Barnard Building, Faculty of Health Sciences, University of Cape Town, Anzio Road, OBSERVATORY 7925, Cape Town, South Africa Tel: +27 21 406 6476/6385 Fax: +27 21 448 5935

## **DIVISION OF PLASTIC SURGERY**

## Head of Division: Professor DA Hudson

## **Divisional Profile**

The Division of Plastic Surgery combines an academic hospital service, with university teaching, clinical training and research. The division also functions at Red Cross Children's Hospital and pressures sores are dealt with at Eerste River Hospital. Specialist tertiary services are provided to patients of the Western Cape and beyond.

The Department is actively involved in a number of multidisciplinary which include:

- 1. head and neck cancer clinic
- 2. skin cancer clinic
- 3. melanoma clinic
- 4. transsexual clinic
- 5. combined breast clinic

Multi-disciplinary clinics at Red Cross Children Hospital include:

- 1. Cleft lip and palate clinic
- 2. Inter sex clinic

- 3. Cranio facial clinic
- 4. Congenital ear clinic
- 5. Congenital hand clinic

Teaching is provided to fifth year medical students PAMS, and specialist training of post graduates is undertaken – including supernumerary registrars from other countries. The Department is actively involved in research in all aspects of Plastic Surgery, including paediatric Plastic Surgery.

The Department enjoys a strong partnership with colleagues in private practise. These part time surgeons provide valuable input to the Department both in teaching and in clinical services.

Dr S Adams was an invited guest and chairman at the World Cleft Lip & Palate Congress held in USA.

The Division continued to conduct research in breast reconstruction, complex wounds, paediatric plastic surgery, microsurgery and buns and a number of publications emanated from this.

## **Divisional statistics**

#### Permanent and Long Term Contract Staff

Professors	1
Senior Lecturers	2
Lecturers	10
Administrative Staff	1
Total	14

#### Students

PhD	1
Master's	6
Undergraduate	0
Total	7

## **Research Fields and Staff**

#### PROF. D.A. HUDSON

Breast Reconstruction; Wound Healing; Burns.

#### DR K. ADAMS

Management of complex wounds, Transsexual Surgery, Burns

#### DR S. ADAMS

Cleft Lip Palate; Lower leg Reconstruction, Burns

## **Contact Details**

Postal address: Department of Plastic, Reconstructive & Maxillo-Facial Surgery, Room H53/69, Old Main Building, Groote Schuur Hospital, Observatory, 7925, Republic of South Africa. Tel: +27 21 406 6415 Fax: +27 21 406 6649 UCT General Enquiries: +27 21 650 9111 UCT web: http://www.uct.ac.za

## **Research output**

#### Articles in peer-reviewed journals

Airoldi, F., Baldino, G., Mortola, P., Losa, S., Clerici, G., Tavano, D., Latib, A., Gori, A. and Faglia, E. 2013. Nitinol stents with polymer-free paclitaxel coating for stenosis of failing infrainguinal bypass grafts. Journal of Cardiovascular Surgery, 54: 441-445.

Baigrie, R.J. 2013. Modern management of colorectal cancer. South African Family Practice, 55(1): 47-52.

Bernon, J., McGuire, C.I., Carrara, H. and Lubbe, D. 2013. Endotracheal tube cuff pressures - the worrying reality: a comparative audit of intra-operative versus emergency intubations. SAMJ South African Medical Journal, 103(9): 641-643.

Bezuidenhout, D., Oosthuysen, A., Davies, N.H., Ahrenstedt, N., Dobner, S., Roberts, P. and Zilla, P. 2013. Covalent incorporation and controlled release of active dexamethasone from injectable polyethylene glycol hydrogels. Journal of Biomedical Materials Research Part A, 101A: 1311-1318.

Bezuidenhout, D., Pennel, T., Fercana, G., Zilla, P. and Simionescu, D. 2013. Evaluation of elastin-derived vascular grafts in a circulatory model. Cardiovascular Pathology, 22(3): e29-e52.

Botha, M., Wells, M., Dickerson, R., Wallis, L.A. and Stander, M. 2013. Adrenaline and amiodarone dosages in resuscitation: rectifying misinformation. SAMJ South African Medical Journal, 103(10): 713-714.

Bracher, M.J., Bezuidenhout, D., Lutolf, M., Franz, T., Sun, M., Zilla, P. and Davies, N.H. 2013. Cell specific ingrowth hydrogels. Biomaterials, 34: 6797-6803.

Broeders, J., Roks, D., Ali, U., Watson, D., Baigrie, R.J., Cao, Z., Hartmann, J. and Maddern, G. 2013. Laparoscopic anterior 180-degree versus nissen fundoplication for gastroesophageal reflux disease. Annals of Surgery, 257(5): 850-859. Bruijns, S. 2013. Junk food and the rise of acute coronary syndrome in Africa. African Journal of Emergency Medicine (AfJEM), 3: 101-101.

Bruijns, S. 2013. Shajara (African diary/dossier Africa). African Journal of Emergency Medicine (AfJEM), 3: 35-36.

Bruijns, S. and Wallis, L.A. 2013. Submission for publication made easy. African Journal of Emergency Medicine (AfJEM), 3: 49.

Bruijns, S., Guly, H. and Wallis, L.A. 2013. Effect of spinal immobilization on heart rate, blood pressure and respiratory rate. Prehospital and Disaster Medicine, 28(3): 210-214.

Bruijns, S., Guly, H., Bouamra, O., Lecky, F. and Wallis, L.A. 2013. Heart rate and systolic blood pressure in patients with minor to moderate, non-haemorrhagic injury versus normal controls. Emergency Medicine Journal, 30: 901-905.

Bruijns, S., Guly, H., Bouarma, O., Lecky, F. and Wallis, L.A. 2013. The value of traditional vital signs, shock index, and age-based markers in predicting trauma mortality. Journal of Trauma and Acute Care Surgery, 74(6): 1432-1437.

Bruwer, Z., Futter, M.J. and Ramesar, R.S. 2013. Communicating cancer risk within an African context: experiences, disclosure patterns and uptake rates following genetic testing for Lynch syndrome. Patient Education and Counseling, 92: 53-60.

Buys, H., Muloiwa, R., Westwood, C., Richardson, D., Cheema, B. and Westwood, A.T.R. 2013. An adapted triage tool (ETAT) at Red Cross War Memorial Children's Hospital medical emergency unit, Cape Town: an evaluation. SAMJ South African Medical Journal, 103(3): 161-165.

Caesar, B., McCollum, G.A., Elliot, R., Williams, A. and Calder, J.D.F. 2013. Stress fractures of the tibia and medial malleolus. Foot and Ankle Clinics, 18(2): 339-355.

Cairncross, L.L. and Panieri, E. 2013. Pre-operative diagnosis of thyroid cancer: clinical, radiological and pathological correlation. South African Journal of Surgery, 51(2): 46-49.

Calvello, E., Megan, B., Risko, N., Theodosis, C., Totten, V., Radeos, M., Seidenberg, P. and Wallis, L.A. 2013. Emergency care and health systems: consensus-based recommendations and future research priorities. Academic Emergency Medicine, 20: 1278-1288. Calvello, E., Reynolds, T., Hirshon, J., Buckles, C., O'Neill, J. and Wallis, L.A. 2013. Emergency care in Sub-Saharan Africa: results of a consensus conference. African Journal of Emergency Medicine (AfJEM), 3: 42-48.

Cheema, B. 2013. International standards of care for children in emergency centres-do they apply to Africa. African Journal of Emergency Medicine (AfJEM), 3: 50-51.

Cheema, B., Stephen, C. and Westwood, A.T.R. 2013. Paediatric triage in South Africa. South African Journal of Child Health, 7(2): 43-45.

Chinnery, G., Bernon, M., Banderker, M., Roberts, R. and Krige, J.E.J. 2013. Gastric heterotopia causing jejunal ulceration and obstruction. South African Journal of Surgery, 51(4): 146-147.

Chinnery, G., Krige, J.E.J., Bornman, P.C., Bernon, M., Alharethi, S., Hofmeyr, S., Banderker, M., Burmeister, S. and Thomson, S.R. 2013. Endoscopic management of bile leaks after laparoscopic cholecystectomy. South African Journal of Surgery, 51(4): 116-121.

Coetzee, E.D.T. 2013. Early detection of colorectal cancer. CME-Continuous Medical Education, 31(6): 210-212.

Coetzee, E.D.T. and Thomson, S.R. 2013. Inherited colorectal cancer: a plea for a national registry. South African Journal of Surgery, 51(2): 42-43.

Coetzee, E.D.T., Rode, H. and Kahn, D. 2013. Pseudomonas aeruginosa burn wound infection in a dedicated paediatric burns unit. South African Journal of Surgery, 51(2): 50-53.

Cook, C.D. 2013. Socio economic status as a risk factor for late presentation of glaucoma in Canada. Canadian Journal of Ophthalmology-Journal Canadien D Ophtalmologie, 48(2): 79-80.

Cox, S., Naidoo, N.G., Wood, R.J., Clark, L.M. and Kilborn, T. 2013. Tuberculous iliac artery aneurysm in a pediatric patient. Journal of Vascular Surgery, 57(3): 834-836.

Dalwai, M.K., Tayler-Smith, K., Trellers, M., Maikere, J., Twomey, M., Wakeel, M., Iqbal, M. and Zachariah, R. 2013. Implementation of a triage score system in an emergency room in Timergara, Pakistan. Public Health, 3(1): 43-45.

De Boer, B. and Lecuona, K. 2012. Ciliary body melanoma masquerading as granulomatous uveitis with secondary glaucoma. Ophthalmology International, 7(2): 58.

Du Toit, N. 2013. Sudden loss of vision. South African Family Practice, 55(3): 235-240.

Du Toit, N. 2013. The gradual loss of vision. South African Family Practice, 55(6): 493-500.

Du Toit, N. and Van Der Merwe, J. 2013. Nodular scleritis and perforation of the globe in an immunocompromised patient with tuberculosis. Ophthalmology International, 2013: 31-32.

Du Toit, N. and Van Zyl, L. 2013. The red eye. South African Family Practice, 55(1): 33-40.

Du Toit, N., Mustak, H. and Cook, C.D. 2013. Wound dehiscence after cataract and intraocular surgery: the experience at Groote Schuur Hospital, Cape Town. Ophthalmology International, 2013: 45-50.

Du Toit, N., Mustak, H., Levetan, B.N. and Cook, C.D. 2013. Open globe injuries in patients seen at Groote Schuur Hospital, Cape Town, South Africa. South African Journal of Surgery, 51(3): 97-101.

Duke, R., Ameh, S., Nwagbara, E., Lewallen, S. and Courtright, P. 2013. Challenges faced by key informants practicing case finding for vision loss in children: the experience in Cross River State, Nigeria. International Health, 5: 259-265.

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## Peer-reviewed published conference proceedings

Perks, T.J., Trauernicht, C.J., Hartley, T., Hobson, C., Lawson, A.J., Scholtz, P., Dendere, R., Steiner, S.V.G. and Douglas, T.S. 2013. Effect of aluminium filtration on dose and image quality in paediatric slot-scanning radiography. Proceedings of 35th Annual International Conference of the IEEE Engineering in Medicine and Biology Society in Conjuction with the 52nd Annual Conference of Japanese Society for Medical and Biological Engineering (JSMBE), 3-7 July 2013, Osaka, Japan. Piscataway, NJ, United States of America: IEEE EMBS. ISBN 9781457702143.

# **DEAN'S OFFICE**

## **Research output**

## **Chapters in books**

Benatar, S.R. 2013. Afterword. In A. Pinto, and R. Upshur, (eds), Introduction to Global Health Ethics, pp. 159-159. New York, USA: Routledge. ISBN 9780415673525.

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Benatar, S.R. 2013. Needs, obligations and international relations for global health in the 21st century. In J. Coggon, and S. Gola, (eds), Global Health and International Community, pp. 63-80. London: Bloomsbury Publishing Plc. ISBN 1780935587.

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